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WYOMING QUARTERLY UPDATE

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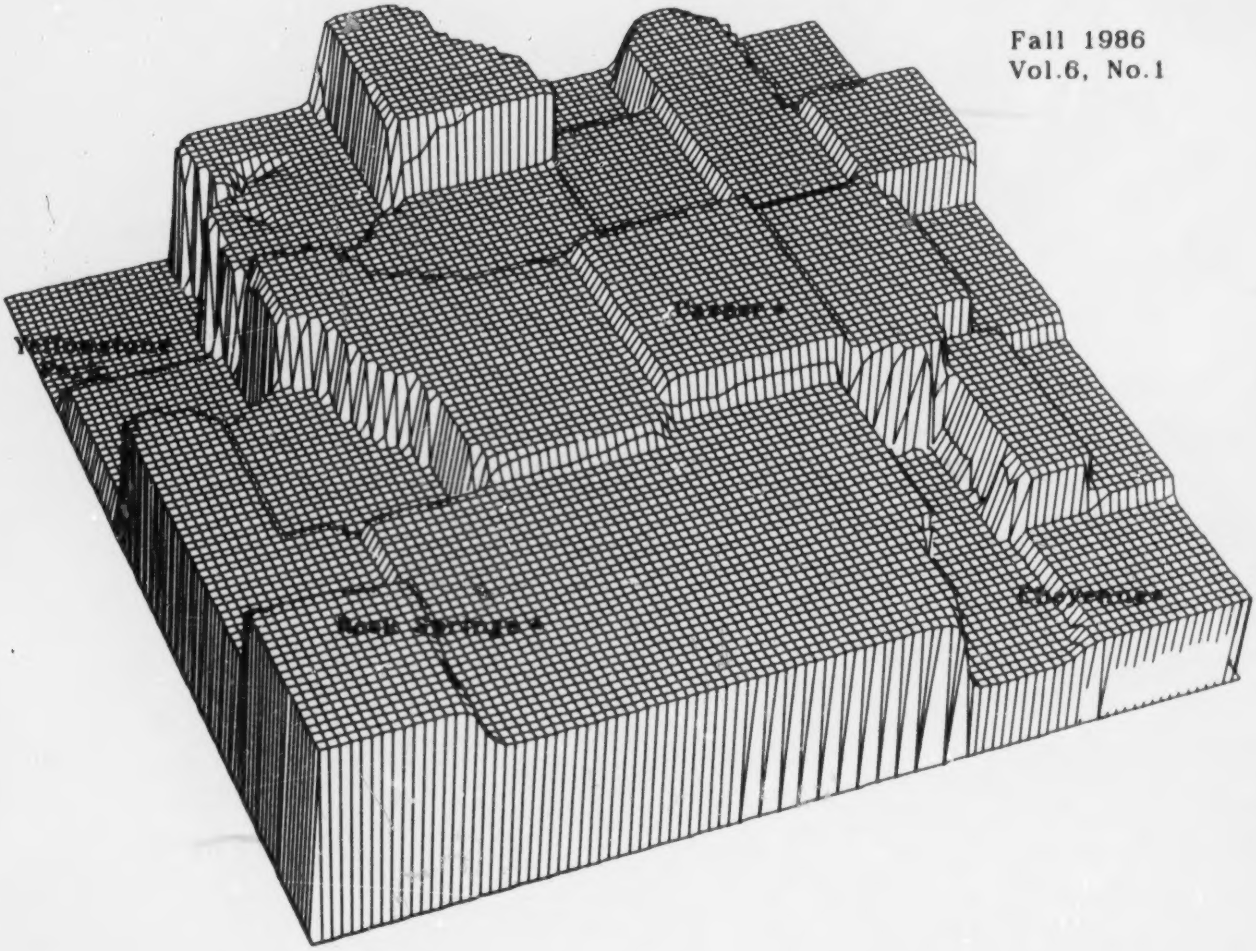

IPR

August 1986 County Unemployment Rates

Wyoming Quarterly Update

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WQU provides current indicators and timely, easily accessible data. Most of the data published in WQU are updated quarterly with the most current numbers. The complete data sets from which WQU originates are maintained, together with documentation by IPR. Readers are encouraged to contact IPR to find out how to gain access to data which do not appear in the WQU. Many data series, such as gasoline sales and taxation data, span more than 30 years. Numerous other series cover 20 years or more.

Efforts to expand the subject and geographic detail (county data) of data sets will be made continuously. Featured in this edition is a perspective of economic development activities in the state.

The cover of each edition features a contour map illustrating the geographic distribution of a particular variable. This edition presents a contour map depicting county unemployment rates for August 1986.

First-time readers of WQU should refer to the "format" explanations on page 48 for keys on how best to use and interpret data presented in this publication.

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UNIVERSITY OF WYOMING

FRONT MATTER

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WYOMING
SCENE

Overview and Perspective

During the past several months, considerable uncertainty (prompted by a variety of mixed signals) has led many economists to wonder whether the economy was gathering strength. In recent months, however, some disturbing trends have appeared.

Consumer spending, which has provided the impetus for much of the growth throughout the recovery period since 1983, appears to be in trouble. As jobs become increasingly difficult to find and as growth in income slows, consumer spending could begin to soften. High debt loads and low savings further cloud the outlook.

Significant improvements in manufacturing performance, a millstone around the nation's economic neck for the better part of the past two years, also do not appear likely in the near-term. Ballooning foreign imports, which hit record levels during the summer, continue to hamper industrial growth. In addition, the construction sector, which showed great promise during the first half of the year, began to slip in the third quarter.

Personal income, one of the major underpinning for consumer spending, did gain in August by $12.7 billion, to an annualized rate of $3,505.3 billion seasonally adjusted. It was the largest such increase since April. Wage income, which comprises about three-fifths of total personal income, rose by 0.6 percent. However, the growth in wage income was still behind the pace of 1985. Wage income statistics have been trending lower, dropping from a 7.7 percent annual rate of increase during the fourth quarter of 1985 to a 6.4 percent rate during the first quarter and to a 2.9 percent rate during the second quarter. In September, while personal income rose only at a modest 0.3 percent rate, consumer spending increased by 1.9 percent, mostly because of strong car sales prompted by cut-rate financing. Excluding car sales, however, consumer spending showed virtually no change.

Some evidence of upward price pressures also appeared. In August, consumer prices increased 3.7 percent on an annualized basis, excluding energy prices. Prices increased significantly for such items as housing, apparel, and for personal services such as education. Service prices rose by about 5 percent at an annualized rate.

Recent improvements in the labor market picture were beginning to reverse field by the end of the third quarter. Areas that previously had shown the most strength, including construction and services, weakened. Manufacturing continued to be a sore spot, the victim of weak exports and a flood of imports.

In September, the national unemployment rate (excluding the military) rose to 7 percent, following declines throughout the summer. In June the unemployment rate stood at 7.3 percent, dropping to 6.9 percent in July and to 6.8 percent in August. Factory employment fell by 38,000 jobs in September, although the figures were somewhat biased by a strike at Deere & Company. In addition, factory employment gains calculated for August turned out to be no gains at all once the final statistics were published. The length of the factory workweek also failed to show any improvement. During the period from January through the end of September, national factory employment dropped by 219,000 jobs. Factory employment generally has been declining since the summer of 1984. Durable goods, influenced by the strike at Deere & Co., showed the biggest drops, although weaknesses were evident in softgoods as well. Most softgoods categories posted only slight gains or losses. Softgoods most negatively affected were in areas particularly sensitive to imports, such as nonelectrical machinery, primary metals, and instruments.

One bright spot was that while factory employment continued to decline, manufacturing productivity increased at an annual rate of 4.2 percent over the summer. In the long run, at least, such figures might mean domestic manufacturers will be better able to compete with foreign producers. However, the growth rate for the year was still below similar rates during the past two years. Through the first three quarters, manufacturing productivity had increased at an annual rate of 3.3 percent, compared to 4.4 percent for all of 1985 and to approximately 5 percent in 1983 and 1984. Capacity utilization of the nation's manufacturing plants, moreover, was stuck at around 79 percent for the third quarter of 1986.

Jobs in oil and gas extraction industries continued to drop in September, but at a slower rate than in previous months. The number of active rigs in the U.S. increased to 760 in September--an improvement, but a long way from the 1,900 rigs that had been operating in January.

Overall, nonfarm payrolls increased by about 107,000 seasonally adjusted during September, to a total of 100.4 million. Taken as a whole, the third quarter exhibited the slowest growth in jobs since the beginning of the recovery more than three years ago.

Construction activity entered the second quarter like the proverbial lion of March, but the sector seems to be wrapping up the year more like a lamb. Housing starts fell to an annual rate of 1.68 million in September, down from 1.82 million in August. Both single-family homes and apartment building starts dropped. Single-family units fell to an annual rate of 1.12 million in September, down 16 percent from the peak of 1.34 million attained last January. Multiple family dwelling starts dipped from 698,000 in April to 502,000 in September. Part of the problem with apartment buildings was the new tax law's more stringent restrictions on apartment building investments. Home buyers also resisted the high prices of new homes, which averaged $116,300 in August, an increase of 17.2 percent over August 1985.

Construction employment reflected the slowdown in building activity. In September, construction employment was relatively flat, after adding 100,000 jobs in each of the previous two quarters.

While the service sector continued to generate most of the new jobs created during the third quarter, it was doing so at a slower pace. Services added 483,000 jobs to the economy during the third quarter, down from 521,000 during the second quarter and down from 700,000 during the fourth quarter of 1985. One reason for the slowdown was slower growth in government jobs, but other segments were affected as well. On the other hand, financial services employment, and employment in business and health services, continued to expand at a strong clip.

In Wyoming, economic development was on the lips of virtually every candidate for public office during the recent political season. Perhaps the biggest boost to economic development was the passage of Amendment #4, which would allow the state to invest in private ventures aimed at stimulating economy activity.

News on other fronts, meanwhile, remained gloomy. In August, the state unemployment rate stood at 9.3 percent, up sharply from the 7.1-percent rate registered in August 1985. At the same time, the labor force continued to contract; the number of persons with jobs dropped from both July and year-earlier figures. There were 20,500 unemployed persons in the state in August, compared to 16,298 during August of 1985. On a county basis, the highest unemployment rates (on an unadjusted seasonal basis) were in Big Horn (13 percent), Uinta (11.6 percent), Natrona (11.0 percent), and Fremont (10.4 percent) counties.

State planners also began exploring ways to cope with projected budget shortfalls during the next biennium. The state's Consensus Revenue Estimating Group projected that General Fund revenues would grow to $383.2 million by fiscal year 1990, compared with a projected $343.2 million in fiscal year 1987. However, the 1990 figure still is less than the state has been collecting. In fiscal year 1986, for instance, General Fund revenues totaled $392.5 million.

S.T. Mast, IPR

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Fall Minerals Outlook

OVERVIEW

The bright spots in Wyoming's mineral industry are a slight increase in oil prices over the second quarter; completion of Chevron's fertilizer plant, which uses sulfur from Wyoming; the completion of Exxon's Shute Creek gas processing plant; continued exploration for platinum and gold; probable increased production of gypsum; and another year of relatively stable production of trona from southwestern Wyoming.

Natural gas and coal production, however, have not met earlier expectations and have been revised downward from earlier estimates. Coal production, in particular, is expected to decrease by 4 percent and will for the first time since 1966 not increase over the previous year. Bentonite production will undoubtedly also decrease. The prices paid for almost all of Wyoming's produced minerals have also declined. Sulfur is a notable exception, with its value expected to increase in 1986.

Precipitous abandonment of stripper oil wells has not yet materialized, although an estimated 1,000 of the 5,000 or so stripper wells in Wyoming have been at least temporarily shut-in. If oil prices do not at least stabilize, more stripper wells will meet this same fate in the future, along with some other oil wells with high production costs. The good news is that there are some indications that oil prices may at least stabilize in the middle teens for awhile at least. However, $14-to-$16-per-barrel oil will do little to stimulate a renewal of exploration drilling activities, and the chances of oil approaching $20 per barrel seem slim. There is little likelihood that the Federal Government will establish an import quota to boost prices during the present administration, although most of the oil-producing states, including Wyoming, have asked for this action.

The domestic oil industry now finds itself in the same position as the uranium and other metals industries. The oil industry, particularly the independent producers, are fighting for survival in the face of foreign competition and many are losing. Federal policies did not protect these other mineral commodities, and there does not appear to be any trends that would lead one to believe that the demise of the oil industry will be turned around in the near-term. A second Arab oil embargo is highly improbable; as mentioned earlier, a federal import quota is also unlikely, and the chances of a new federal energy policy promoting the domestic oil industry seems remote. Short of a Middle East war cutting off OPEC supplies, which would have other grave consequences, the best chance for help is a relatively stable price even if it is below the often-cited goal of $20 per barrel.

Gary B. Glass, State Geologist
Geological Survey of Wyoming

Table 1: Wyoming Mineral Production Forecast to 1991[1].

Calendar Year	Oil Production[2]	Natural Gas Production[3]	Carbon Dioxide Production[4]	Coal Production[4]	Trona Production[4]	Uranium Production[4]
*1981	122.1	455.4	--	102.8	11.8	4.6
*1982	118.7	465.1	--	107.9	10.1	2.1
*1983	120.9	539.7	--	112.2	10.5	3.0
*1984	127.8	600.1	--	130.7	11.0	1.6
*1985	131.0	597.9	--	140.7	10.8	0.6
1986	123.0	585.0	25.0	135.0	11.5	0.3
1987	115.5	623.0	75.0	140.0	11.7	0.3
1988	107.5	659.0	100.0	143.0	12.1	0.4
1989	100.0	696.0	100.0	146.0	12.1	0.5
1990	93.0	732.0	100.0	150.0	12.2	0.5
1991	86.5	780.0	100.0	152.0	12.5	0.6

*Actual values for comparison:

[1] Geological Survey of Wyoming, September, 1986
[2] in millions of barrels
[3] in billions of cubic feet
[4] in millions of tons

OIL AND GAS UPDATE

OPEC's decision to institute a trial production agreement for September and October has raised the posted price for Wyoming crude oil to the $14-a-barrel range. Just several months ago, some Wyoming producers were receiving less then $10 a barrel for their oil. There is still a great surplus of oil on the world market due to significant production increases by OPEC through August of this year. It may be several months before the surplus dries up and prices start to rise, assuming that the countries belonging to OPEC honor their production quotas. If they do not, a return to $10 or less for a barrel of oil is possible. Such a significant decline in oil prices, however, does not appear likely.

Low oil prices, which have characterized most of this year, are having their effect in several interrelated areas. The number of active rigs has been below 30 since the first week in April, dropped as low as 18 in July and has averaged 37 for the first eight months of 1986. Compare this to the average rig count of 93 for all of 1985 and 190 for all of 1981.

It has been estimated by the Wyoming Oil and Gas Conservation Commission that about 1,000 of the state's more than 5,000 stripper wells have been shut down since federal and state regulators notified well operators in April that they could temporarily stop production from the wells without losing their leases. Production from the shut-in wells would probably be in the neighborhood of 1,000,000 barrels a year since they were probably averaging under three barrels a day.

If well completion figures for the first eight months of 1986 are projected to the end of the year, new field wildcats will probably total less than 300 and all wells will probably be under 800. There may be some increased year-end drilling which could push these totals somewhat higher; however, it appears that 1986 will be the state's worst year since 1971 when 345 new field wildcats and 893 total wells were completed. That was prior to the OPEC oil embargo when oil was selling for around $3 a barrel.

The completion rate, along with rig count and oil price, illustrate the depressed state of the Wyoming oil and gas industry. The completion figures also show a lack of interest in finding new gas reserves. Gas prices are currently averaging around $2.40 per MCF. Even if new gas is discovered at the present time, it is almost impossible to find a market due to surplus gas. It does appear, however, that the current gas bubble may disappear in 1987 or early 1988.

A review of oil and gas production during the 1981-1985 period shows that production from fields discovered before 1981 may have peaked in 1984. The increase in production from these older fields between 1982 and 1984 was probably caused for the most part by production from large discoveries of the middle 1970s in the Overthrust Belt and the Powder River Basin. Although these fields are still producing, it is not enough to offset the decline in many of the other older fields in the state. Production from fields discovered from 1981-1985 is still increasing due to the drilling boom of that period. Now that many fewer wells are being drilled, it is certain that there will not be enough new discoveries to offset the decline in the older fields and the projected future decline in the 1981-1985 fields.

A very sharp production gain in gas occurred between 1982 to 1984, almost entirely caused by tremendous production from the Whitney Canyon-Carter Creek and Painter Reservoir fields in the Overthrust Belt. The small decline in production from 1984 to 1985 was due to the surplus of gas on the market. Production should again increase when the surplus dries up, since a large percentage of the state's gas wells are presently shut-in and several large gas discoveries are awaiting full-scale development.

In a related item, the new Exxon gas processing plant has started up and is presently running performance tests in preparation for full-scale production later this year. Exxon has contracts to sell up to 200 million cubic feet per day of carbon dioxide(CO_2) to Chevron for an enhanced oil field recovery project in northern Colorado and 50 million cubic feet of CO_2 per day to Amoco for a similar operation in Wertz Field near Bairoil. About 110 million cubic feet of methane per day has been sold to three natural gas pipeline companies. The plant will also produce several hundred tons of sulfur per day (from hydrogen sulfide gas) and small amounts of helium and nitrogen. These by-products will also be sold.

Exxon Pipeline Company has announced the completion of a 112-mile, 20-inch pipeline to carry CO_2 from Rock Springs to a receiving facility near Bairoil. Exxon completed a 49-mile, 24-inch pipeline in 1985 from its gas plant to Rock Springs.

Wyoming's Attorney General has released an opinion on severance tax rates for carbon dioxide, hydrogen sulfide, helium, and other non-hydrocarbon gases contained in natural gas. The opinion stated that these non-hydrocarbon gases can be taxed at a 6-percent rate rather than the 2-percent rate that Amoco and Chevron had claimed. The opinion relied on a number of definitions of the term "natural gas" to support its argument that non-hydrocarbon gases are natural gases.

The Interior Department announced that starting in August it would modify the way it determines the value of natural gas produced from federal and Indian lands. In the past, companies have been required to pay gas royalties based on the regulated price in excess of $3 per MCF when they were only able to sell the gas for much less. The new changes should accommodate either falling or rising gas prices more equitably.

Anschutz Corporation began work on its Mosquito Creek well earlier this month. It is to be a 5,000-foot test and should take only a month to drill. Work has been delayed due to an appeal by a Wilson resident to the Interior Board of Land Appeals.

Phillips Petroleum has scheduled a 6,500-foot Amsden test in Shoshone National Forest about 14 miles west of Cody in an undrilled township. The closest Pennsylvanian production is 15 miles to the east at Shoshone

Field.

Amoco Production reported the completion of a CO_2 gas discovery in southwestern Wyoming in T.24N., R.112W. The well flowed 13.1 million cubic feet of gas per day from the Madison between 16,466 and 16,496 feet.

Since the last issue of the Wyoming Quarterly Update, the Wyoming Board of Land Commissioners has held two lease sales. The July 15 lease sale drew $418,280 in high bids. Only 63 of the 200 tracts received bids, and the average bid was $16.43 per acre. The high $234-per-acre bid was made by Texaco, Inc. for a 640-acre lease on the Moxa Arch. The lease is located in Lincoln Road Field which produces gas from the Frontier Formation.

The September 16 sale received high bids totaling $171,975 for 80 of the 200 parcels offered. The average bid was only $5.10 per acre. The high per-acre bid of $360 was made by American Oil and Gas Corporation for a 75.5-acre tract adjoining Minnelusa oil production in Camp Creek Field in the Powder River Basin.

The U.S. Bureau of Land Management's August lease sale drew high bids of $529,184. Of the 104 tracts offered, 88 received bids with an average per-acre bid of $23.29. The high bid was $227.63 per acre by Hunt Oil for an 80-acre lease in the northern Powder River Basin. The lease is located on the southeast side of Rocky Point Field which produces oil from the Muddy Sandstone and the Minnelusa Formation.

The last state and last federal sale produced much less revenue and much lower average per-acre bids than almost all of the sales since 1984. This is probably due in part to the depressed condition of the industry, but may have been due to a shortage of high-quality tracts.

Rodney H. DeBruin, Petroleum Geologist,
Geological Survey of Wyoming

COAL UPDATE

Wyoming coal production for 1986 appears to be heading downward for the first time in almost 20 years. Coal delivery reports for the first six months of the year indicate that coal deliveries are almost 5 million tons less than they were a year ago. After second quarter 1986, deliveries were substantially less than those for the same period a year ago. If monthly deliveries for the remainder of 1986 were to continue at 1985's rate, final production figures for 1986 could still be 5 million tons less. If deliveries in the second half of 1986 continue at the same rate as the first half, total coal production could be as much as 9 million tons less than in 1985.

Some coal producers in the Powder River Basin have predicted that their 1986 production will be 10 percent less than 1985 production. If this is the case for all Powder River Basin mines, 1986 coal production could even be below 1984's production of 130.7 million tons. Preliminary data, however, indicates that Powder River Basin production for the first half of 1986 is only 5 percent less than production for the first half of 1985.

It is most likely that production in the second half of 1986 will continue at or about 1984's rate, and that the unreported tonnage will be between the 1984 and 1985 totals. This means that 1986 coal production in the state will be about 135 million tons, a decrease of 4 percent from last year's production.

Coal deliveries to the states of Indiana, Iowa, Louisiana, Oklahoma, and Texas in the first half of 1986 were down the most from 1985 deliveries. In the case of Indiana, this probably reflects the cessation of deliveries from Carbon County Coal Company in early 1986. For the other states cited, this could reflect the displacement of coal by lower priced oil and gas in those utilities capable of fuel switching and/or the availability of lower priced electricity generated elsewhere from low cost oil- or gas-fired generating plants.

In a recent article discussing the major threats to the U.S. coal industry (Schleede, 1986), it was pointed out that coal as a utility fuel has lost much of its delivered cost advantage over oil and gas, especially near waterways, on the coast, or near refineries (or gas fields) where oil (and gas) is available in large quantities. According to this article, coal is displaced by oil and gas in several situations. First, regional power pools generally use the lowest cost power plants or generating units first when adding generating capacity to the system. At present, the lowest cost units available in the power pool are oil- or gas-fired. Second, when coal had a price advantage over oil and gas, it was more economical for utilities to shut down or decrease the use of oil- and gas-fired units and purchase electricity "by wire" from coal-fired units elsewhere. Today it is more economical for utilities to utilize any available oil- and gas-fired units rather than purchase electricity from coal-fired units. Third, utilities that operate both older oil- and gas-fired units and newer coal-fired units find it cheaper to back down the capacity of the coal-fired units (and take the minimum amount of coal allowed by contract) and utilize oil- or gas-fired plants as much as possible. Finally, there is a danger that continued low prices for oil and gas in the utility fuel market could result in reconverting oil- and gas-fired units that had been converted to coal in the early 1970s back to oil or gas. The article concludes that the displacement of coal is inevitable with OPEC's low prices, that although the delivered price of coal has decreased, the F.O.B. mine price has decreased much more (on a national average) than the price of transportation and that coal producers have been forced to absorb most of the price reductions.

Although all of the factors described above may not apply directly to any given utility company using Wyoming coal, all these factors are influencing both the production and the price of Wyoming coal to some degree. The presence of low-priced oil and gas available to utilities appears to be having a direct effect on the state's spot coal sales. In March of this year, coal delivered on the spot market accounted for about 7.4 percent of the total deliveries. The amount of spot coal sales has decreased each month since then; in June 1986,

Table 2: Reported Coal Deliveries in Tons.[1]

	1984 MONTHLY	1984 CUMULATIVE	1985 MONTHLY	1985 CUMULATIVE	1986 MONTHLY	1986 CUMULATIVE
JANUARY	9,540,200	9,540,200	11,601,200	11,601,200	11,646,300	11,646,300
FEBRUARY	9,654,600	19,194,800	10,473,900	22,075,100	10,317,700	21,964,000
MARCH	10,875,000	30,069,800	11,674,900	33,750,000	11,238,520	33,202,520
APRIL	8,721,400	38,791,200	11,632,800	45,382,800	9,954,170	43,156,690
MAY	9,481,500	48,272,700	11,497,900	56,880,700	10,105,320	53,262,010
JUNE	9,464,500	57,737,200	11,692,200	68,572,900	10,499,280	63,761,290
JULY	11,019,600	68,756,800	11,893,500	80,466,400	--	--
AUGUST	11,433,000	80,189,800	12,107,100	92,573,500	--	--
SEPTEMBER	10,440,000	90,629,800	11,325,000	103,898,500	--	--
OCTOBER	10,492,500	101,122,300	11,048,500	114,947,000	--	--
NOVEMBER	11,814,200	112,936,500	10,589,700	125,536,700	--	--
DECEMBER	11,486,800	124,423,300	11,459,300	136,996,000	--	--
TOTAL REPORTED DELIVERED TONNAGE	124,423,300	--	136,996,000	--	--	--
TOTAL TONNAGE NOT REPORTED	6,322,479	--	3,428,446	--	--	--
TOTAL TONNAGE PRODUCED[2]	130,745,779	--	140,424,446	--	--	--

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[1] Source: National Marketing Reports by Coal Marketronix and Coaldat Marketing Report by DRI, Inc., compiled from FERC Form 423 filed monthly by electric utilities.

[2] Source: Wyoming State Mine Inspector's Annual Report.

spot sales accounted for only 2.5 percent of the total deliveries.

It would appear that the disadvantages of spot sales are outweighing the advantages. Most small producers cannot compete with large producers for the extremely low-priced spot coal sales (and still stay in business), and the large producers are affected by the erosion of contract prices at the time of renegotiation (under reopener clauses in their contracts) due to the presence of low-priced spot coal that is also available to the utility. The low-priced spot coal also causes a decrease in overall coal prices, which translates to less valuation and a decreased tax base, less revenue from taxes and royalties, decreased state and local services, and decreased public and community projects. On the plus side, spot sales have kept some companies in business and reduced layoffs, but break-even or loss sales cannot continue indefinitely.

Average coal prices will probably continue to fall in the next few years in response to overall market conditions, as well as the result of a greater percentage of the state's coal being produced at Powder River Basin mines. The value of the state's coal produced in 1984 was approximately $1.2 billion dollars, or about $9.77 per ton. About 85 percent of the production that year came from low-cost producers in the Powder River Basin; the average value of this coal was about $7.18 per ton. The higher-cost coal produced in the remainder of the state had an average value of about $23.13 per ton. Coal produced in 1985 had approximately the same value of $1.2 billion, but the average value per ton was $9.30. Low-cost producers in the Powder River Basin accounted for 83 percent of the state's total production; the average value of the coal was about $6.73 per ton. The higher-cost coal had an average value of $22.02 per ton. Although 1985 saw both the high production cost and low production cost coal drop in price, the increased production forecast for low-cost coal, coupled with a decreased price, will result in future decreases in overall coal value (price) even if the value of high-cost coal increases.

Revenues from coal taxes in the next few years will fall along with the value of the coal. The revenues generated by coal production and sales will decrease even more after 1986 because the state's severance tax rate on coal (currently 10.5 percent on strip-mined coal) is expected to drop to 8.5 percent. This decrease in tax rate results from the expiration of the special 2 percent Coal Impact Tax that was imposed 10 years ago. The tax is due to expire automatically on the first of January following the year total collections from the tax reach $160 million. It is now estimated that the total collections will exceed the $160-million limit sometime in late 1986 or early 1987. Last year, the Wyoming State Legislature did not pass a bill that would have continued the Coal Impact Tax.

Electric utility companies and their customers continue to benefit from the bargain-basement coal prices available in the current buyer's market. In July, Iowa Public Service (IPS) completed price reopener negotiations with Arch Mineral Corporation on a 360,000-ton-per-year coal contract. The utility was able to cut coal costs by $4.19 million, or $3.88 per ton, for its Neal No. 1 and 2 units at Salix, Iowa. Coal mined at the Seminoe No. 2 Mine in the Hanna Basin was previously delivered to Iowa for $38.80 per ton. With transportation costs on the Union Pacific Railroad (UP) of $10.06 per ton, the coal had an F.O.B. mine price of $28.74 per ton. Under the renegotiated contract, the coal now sells for $24.86 per ton F.O.B. at the mine.

Iowa Public Service (IPS) is also saving its customers $12.2 million on a three-year contract renegotiated with Carter Mining Company. It was also reported that IPS was evaluating bids on a spot contract for the same unit, the George Neal No. 4, for the last half of 1986. This spot purchase was canceled after a July 28 tornado damaged the unit and forced a six- to 12-month shut-down. It may cost the utility (and its customers) $25 million to $50 million to repair the unit. IPS also declared force majeure on the contract it had renegotiated with Carter earlier, even though much of the coal had already been delivered.

In August, Indiana and Michigan Electric (a utility owned by American Electric Power) completed renegotiating both coal and transportation contracts that could result in saving the utility $70 million per year. The new contracts will result in a January 1987 delivered price of $23.67 per ton, a savings of $17.90 per ton from the January 1986 price of $41.57 and in five years (1991) will be subject to renegotiation. The 4-million-ton per year contract (with a 3.6-million-ton minimum) is with Carter Mining Company, operator of the Rawhide and Caballo mines in the Gillette area. Burlington Northern (BN) will deliver the coal to the utility's Rockport, Indiana, generating plant. Although the reduction in mine price will not go into effect until January 1987, the railroad rates have already gone into effect. Delivered price of the coal dropped from $42.41 per ton in March 1986 to $38.17 per ton in April 1986.

San Antonio City Public Service (CPS) announced this summer that it has decided on a fuel choice for a new 500-megawatt generating unit it was planning to build in the early 1990s. The utility had been studying several different ways to supply additional electricity needed in the early 1990s, including a mine-mouth lignite plant, a cogeneration unit, or a conventional, western subbituminous coal-fired plant. The utility has decided that it can save about $1.2 billion in construction and operating costs over a 25-year period if it builds a western coal unit. A major factor in CPS's decision was its recently acquired 20-year transportation contract with the Chicago and North Western Transportation Company (C&NW)/Union Pacific (UP) joint venture railroad. This contract saves the utility $8.00 per ton in freight costs for coal delivered from Cordero Mining Company's mine south of Gillette to an existing CPS unit.

Two new coal supply contracts were signed this summer with Wyoming coal mines. Black Butte Coal Company, a joint venture of Rocky Mountain Energy and Peter Kiewit Sons, won a 4.6-million-ton contract to supply coal to

Valmy Units 1 and 2 in north-central Nevada. Black Butte, operator of a 5.5-million-ton-per-year surface mine east of Rock Springs, began shipments to the units via the Union Pacific Railroad on July 1, 1986. This is the first utility coal contract to Nevada from a Wyoming mine. The plant is owned jointly by Idaho Power and Sierra Pacific Power, and the plant also used coal from an underground mine in Utah. The contract calls for 0.2 million to 1.2 million tons per year, and depending on annual deliveries, the contract could last 21 years.

The second new contract is for coal from the Rochelle Mine in southern Campbell County to fuel power plants in Minnesota. The plants are operated by Northern States Power (NPS). The Rochelle Mine is operated by Rochelle Coal Company (a wholly-owned subsidiary of Peabody Holding Company) and in Wyoming's newest coal mine. Rochelle and two other Montana mines (operated by Westmoreland Resources, Incorporated, and Western Energy Company) will supply NPS with a total of 5.5 million to 13.5 million tons of coal per year through 1990, with the possibility of extending the contract an additional five years. Another Wyoming mine, Nerco's Antelope Mine in northern Converse County, has also signed a tentative contract with NPS. Burlington Northern will transport the coal. The utility expects to save some $19 million in fuel costs in 1987 and about twice that amount each year for the next 15 years.

Despite the new contracts, several Wyoming mines have been forced to lay off workers. In July, 100 workers were permanently laid off at Glenrock Coal Company's Dave Johnston Mine in Converse County, following the announcement that Pacific Power and Light Company (PP&L) would be curtailing electricity generation at the Dave Johnston plant at Glenrock and that less coal would be needed from the mine. This mine produced 3.5 million tons of coal in 1985 and is one of the state's older surface mines, having begun production in 1958. PP&L also announced that power generation would be cut at the Wyodak plant east of Gillette. No layoffs at the Wyodak Coal Mine, which supplies coal to the nearby power plant, have been announced.

Also in the Powder River Basin, Cordero Mining Company laid off six employees this summer. The layoffs apparently involved administrative personnel and left the mine's workforce at 250.

In the Hanna Basin, Arch Mineral Corporation temporarily shut down its Seminoe No. 2 Mine on August 25, laying off 87 miners. Arch closed the mine after failing to reach a new labor agreement with its miners. Negotiations continued in October 1986, but in the meantime, Arch purchased stock-piled coal from the recently closed (April 1986) Carbon County Coal Company underground mine. The coal purchased by Arch was used to fill contracts with Kansas City Power and Light, and Iowa Public Service.

In western Wyoming, FMC Corporation laid off 13 employees at its Skull Point Mine south of Kemmerer in early September. FMC cited the competitive pressures of the coal industry as the reason for the layoffs. The mine produced 0.9 million tons of coal in 1985 and had a workforce of 107 before the layoffs. This mine supplies industrial coal to several of its own operations (including a nearby formcoke plant and trona plant to the east), as well as to other industrial users in nearby states.

The second quarter of 1986 saw renewed activity in in situ gasification and synfuels. These activities have been relatively quiet in the last few years in Wyoming so this activity is encouraging for the renewed development of alternate fuel sources. In July, Energy International, Inc., received a three-year, $12-million grant from the U.S. Department of Energy's Clean Fuels From Coal Program for development of an in situ coal gasification project west of Rawlins. The project is in steeply-dipping coal seams in the same area that Gulf Research and Development Company conducted their North Knobs in situ project. Energy International will contribute another $12 million to what has been termed a "proof of concept" project. If the initial phase of the project has succeeded at the end of three years, a decision will be made in 1989 whether or not to expand the project into a commercial operation.

In August, it was announced that the U.S. Department of Energy was providing $4.5 million for a $9.8-million underground coal gasification project near Hanna. The remaining $5.3 million will be provided by an industry consortium consisting of Amoco Production Company, the Gas Research Institute, the Electric Power Research Institute, and Rocky Mountain Energy Company. The project will test a process called "Controlled Retracting Injection Point (CRIP)" in a 30-foot thick, flat-lying subbituminous coal seam. Stearns Catalytic Corporation of Denver, Colorado, will be the project operator of the experiment with Energy International, Inc., of Pittsburgh, Pennsylvania, as a subcontractor. The project is near the Hanna underground coal gasification experiments that were conducted by the U.S. Department of Energy in the late 1970s and early 1980s.

In a development related to synfuels, a Denver Company, Carbon Fuels Corporation, also announced in August that it was planning a $10-million to $12-million experimental plant to convert coal to "charfuel". The plant would be located in either the Powder River Basin or the Hanna Basin. This "charfuel", which is chemically similar to diesel fuel, is prepared by a patented process that refines raw coal by removing most of the organic sulfur, nitrogen, and hazardous chemicals (such as benzene, toluene and xylene), leaving relatively pure carbon ("char") and a hydrogen-rich liquid. The company is currently searching for funding sources for the project.

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Geological Survey of Wyoming

METALS AND PRECIOUS MINERALS UPDATE

In the 1985 Annual Report of Silver Lake Resources, Inc., (presently known as International Platinum Corporation, a Canadian company based in Toronto), it was reported that the company had acquired 4,800 acres of land surrounding the historic New Rambler Mine (Albany County) for platinum exploration. The company reported that between 1900 and 1918, some high-grade copper ore and concentrate was shipped from the New Rambler Mine, averaged 2.41 ounces per ton palladium and 0.12 ounce per ton platinum. Possible total platinoid production from the mine was 16,870 ounces of palladium and 910 ounces of platinum. Exploration of this area was reportedly initiated on the basis of information reported in several Geological Survey of Wyoming publications (see Currey, 1965; McCallum, 1968; McCallum and Orback, 1968; and Hausel and Harris, 1983).

Interest in platinum mineralization has recently increased in Wyoming, not only because of the worldwide increases in platinum prices (recently as high as $650 per ounce), but also because Wyoming has at least two favorable exploration targets. The worldwide increase in the value of platinum was fueled by social unrest in South Africa (one of the principal producers of the precious metal), and by European regulations requiring new vehicles to have catalytic converters, which use platinum.

The two favorable areas for possible platinum mineralization are located in the Medicine Bow Mountains of southeastern Wyoming. These areas are the Lake Owens and Mullen Creek mafic complexes (Houston and others, 1968). The Lake Owens and Mullen Creek layered mafic complexes are similar to the Stillwater Complex in Montana where platinum deposits are presently being developed. Anomalous platinum has been detected at several localities in the Medicine Bow Mountains, particularly along the northern and eastern margin of the Mullen Creek mafic complex. McCallum and others (1976) suggest that the platinoids could have been reached from several small mafic bodies and transported into nearby shear zones, or the platinoids could have been remobilized from the Mullen Creek mafic complex. In addition to the Canadian company, two major mining firms have interests in the area.

The famous Ferris-Haggarty copper mine in the Sierra Madre of southern Wyoming (see Harris and others, 1985, for location) has recently become a topic of interest. The Ferris-Haggarty was Wyoming's principal copper producer and operated from about 1900 to 1908.

According to the Laramie Boomerang (9-2-86), a Denver-based company known as Andover Resources Corporation plans to put the historic mine back into production. Actual production from the Ferris-Haggarty is not known, but mined, high-grade ore ran from 30 percent to 40 percent copper with some silver and 0.1 ounce to 0.37 ounce per ton gold (Beeler, 1905). The ore at the Ferris-Haggarty is hosted by Magnolia Formation quartzite of Proterozoic age.

As a final note, some exploration for massive sulfides has been occurring in the Hartville uplift, and a significant amount of exploration for gold has taken place in the South Pass region during the past quarter.

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W. Dan Hausel, Deputy Director
Geological Survey of Wyoming

URANIUM AND INDUSTRIAL MINERALS UPDATE

Uranium

In the third quarter of 1986, there was still only one uranium mine operating (Pathfinder - COGEMA's Shirley Basin Mine) in Wyoming. Pathfinder - COGEMA also continued work upgrading its Gas Hills mill. Everest Minerals continued to operate an in situ uranium recovery project at the Highland Mine in Converse County in the Southern Powder River Basin District. Two pilot-size in situ projects began in 1986 (AGIP Mining in the Poison Basin District and Malapai Resources in the Pumpkin Buttes District). U.S. Energy is working on plans for development of its Green Mountain deposit southeast of Jeffrey City. Present plans call for an underground mine in the deposit, which averages about 0.3 percent U_3O_8, higher than most Wyoming uranium deposits. Meanwhile, uranium mine reclamation issues and national legislation on uranium import restrictions were in the news. Based on these activities, a slight increase in uranium production is anticipated in future years.

Malapai Resources plans to start testing uranium recovery methods on its Christiansen Ranch property. This project is located immediately south of the Irigary Ranch property from which Westinghouse Electric Corporation produced small amounts of uranium by an in situ process around 1980. Malapai has identified 30 million pounds of U_3O_8 reserves on its property. Its test program, set to begin in three to six months, plans to produce about 25 gallons per minute of pregnant solution (uranium-bearing) from the test field using portable equipment. Malapai is also conducting baseline studies for a commercial permit. Commercial-scale production is expected to begin in one to 1½ years. If feasible, Malapai may produce from the Irigary property as well.

Pathfinder Mines, Incorporated, 80 percent of which is owned by the French uranium mining and enrichment company COGEMA, proposed changes to the reclamation guidelines in Wyoming's Environmental Quality Act. The proposed changes primarily addressed the timing of reclamation, so that property acquired from another company would not have to be reclaimed if it was to be mined later. Pathfinder's petition, however, was tabled by the Wyoming Environmental Quality Council in September.

The Environmental Protection Agency (EPA) has proposed federal regulations that apply to mine wastes from hardrock mines, phosphate, oil shale, and asbestos mines as well as uranium mines. The mining industry was critical of the proposed regulations since uranium mine wastes are already regulated by other agencies, both state and federal.

A bill to restrict uranium imports and establish a fund for cleaning up uranium mill tailings was introduced in the U.S. Senate by Wyoming Senator Alan Simpson and New Mexico Senator Pete Domenici. If adopted, this bill would aid the domestic uranium mining industry by requiring utilities to purchase uranium for power plants from U.S. producers. Meanwhile, a federal court ordered the U.S. Department of Energy to reduce by 75 percent the amount of foreign uranium that it enriches to power plant grade U-235 and to limit its future enrichment activities to domestically-produced uranium.

As in the previous four years, there was little uranium exploration in Wyoming this summer. Only the Rocky Mountain Energy - Taiwan Power (Taipower) joint venture announced Wyoming exploration plans. Some land acquisition and(or) exploration may also have occurred in the Powder River Basin. The only significant uranium exploration activity in the United States in 1986 was in the Colorado Plateau area of northern Arizona.

Trona

The U.S. Bureau of Mines reports that trona production in 1986 continued at a rate slightly higher than 1985. According to the Wyoming Department of Revenue, 1985 production was less than 1 percent below 1984 production. Trona is Wyoming's largest (in terms of revenue generated) non-fuel mineral. Soda ash (refined trona) exports are increasing. New export contracts have been let to Mainland China, Korea, Australia, and Scandanavia, according to the cooperative marketing organization, the American Natural Soda Ash Corporation.

Wyoming's five soda ash producers--FMC, General Chemical Company (formerly Allied Chemical), Stauffer Chemical, Tenneco, and TG--are still operating at an average 70 percent capacity. Producers expect to increase production by 1 percent to 5 percent over the next five years. It is not likely that there will be either major growth or a major decline in Wyoming's trona production during that time. Soda ash prices are expected to increase slightly.

General Chemical Company laid off about 90 employees in early August, following reorganization of the former Allied Chemical Company. The company said the layoffs were necessary to cut costs. The workforce at General is now about half of what it was in 1979.

Phosphate

Chevron Chemical Company dedicated its new phosphate processing plant near Rock Springs in early September. Construction on the plant, which employs about 200 people, began in 1983. This plant processes phosphate mined north of Vernal, Utah. The phosphate is transported to the plant via a slurry pipeline. Sulfur from Chevron's Carter Creek gas processing plant in Lincoln County is combined at the plant with the phosphate to produce fertilizer.

According to the U.S. Bureau of Mines, the domestic consumption of phosphate for fertilizer has been declining for the past five years. The plant most affected by the opening of Chevron's Rock Springs plant is owned by J.T. Simplot Company in Pocatello, Idaho. Simplot announced the need to lower wages to remain competitive with the Chevron plant and to keep its plant open.

Sulfur

National sulfur production was down about 1 percent for the first half of 1986 from the corresponding period in 1985. Imports, however, declined 35 percent in the same time period due to the depletion of Canadian supplies. Prices increased $5.00 per ton in the first six months of 1986, according to the U.S. Bureau of Mines. In Wyoming, sulfur from Chevron's Carter Creek gas plant is now being used at the new phosphate plant at Rock Springs, and sulfur from Exxon's new Shute Creek gas plant has been committed to contract. There have been no new developments regarding the mining of natural sulfur deposits in Wyoming in this last quarter.

Cement

Mountain States Cement Company in Laramie continued plant modernization and exploration for new supplies of limestone and gypsum. The Albany County Commissioners agreed to lower taxes paid by Mountain States by reducing the plant's assessed value, thereby providing an incentive for continued operation. Currently, the plant employs about 30 persons. Nationally, cement production is running about 10 percent more than last year, according to the U.S. Bureau of Mines.

Limestone

Both the Torrington sugar refinery and the Laramie River power plant are seeking new lime sources. The Torrington refinery, which imports limestone from South Dakota for use in the refining of sugar beets, is looking for a closer source. The Laramie River power plant uses limestone in stack scrubbers. They are currently using limestone from stockpiles at the Holly Sugar Lost Day Quarry north of Fort Laramie, but they are looking for a source of limestone to replace that supply when it is depleted. The Hartville uplift area is probably the nearest source area for these limestone requirements.

Crushed limestone is the principal aggregate used on Wyoming's highways. Construction projects throughout Wyoming used large quantities of limestone aggregate last summer.

Gypsum

Gypsum production in Wyoming remained at high levels in 1986. Nationally, gypsum production also remained high, but production is below the record levels of December 1985 and January 1986. These two national production increases were not reflected in Wyoming, however, as regional construction did not peak at the same time here. Mountain States Cement Company in Laramie was searching for new gypsum supplies in the third quarter of 1986 and conducted exploration drilling on some areas in Albany County.

Stone

Basins, Incorporated, which produces white marble at Wheatland, was purchased by Georgia Marble Company. There was no immediate change in production, however. A proposal to mine "pumice" (actually a potash-rich igneous rock) at a location near Superior in Sweetwater County, was denied by the Wyoming Environmental Quality Council for environmental reasons. There has been no announcement of plans to mine the rock in a less environmentally - sensitive area.

The Geological Survey of Wyoming published an "Open File Report" (86-20) regarding sinter (including travertine) deposits in Wyoming. Sinter deposits have been used as a source for ornamental stone in the past.

Other Industrial Minerals

Bentonite production continues to decrease as domestic oil well drilling decreases.

The Geological Survey of Wyoming published "Open File" reports on pumice and pumicite (86-17), diatomite (86-16), and ballast (86-22). Pumice and pumicite are used as aggregates and abrasives; diatomite is primarily used in filters and filter aids. Pumicite has been locally produced in Wyoming in the past. The occurrence of diatomite had not previously been summarized for Wyoming.

Ballast is crushed aggregate used specifically for weighting and holding railroad ties in place. The three railroads operating in Wyoming produce ballast from Wyoming.

Ray E. Harris, Uranium and Industrial Minerals Geologist
Geological Survey of Wyoming

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Fall Agricultural Outlook

U.S. agriculture is continuing its transition to the new policies of the 1985 Farm Act. Since January, wheat and corn prices have dropped over 25 percent. The lower prices are leading to increased export sales. But burdensome U.S. stocks of feed grain and soybeans will probably grow even larger during 1986/87, while wheat stocks are not likely to fall substantially.

The 1985 Food Security Act is designed to boost the U.S. share of export markets by allowing prices for major program commodities to drop to competitive world levels. Without U.S. loan rates propping up world prices, there will be less incentive for foreign production. At the same time, U.S. production will be limited by annual acreage reduction programs and the long-term conservation reserve program. Lower U.S. crop prices will also boost domestic feed use, as livestock, poultry, and dairy producers respond to cheaper production costs.

Grain Situation

Although the 1986 feed grain program helped to hold plantings 7 percent below the 1985 level, total production will result in the second largest crop ever. Corn is forecast to supply about 83 percent (8.3 billion bushels) of the total. Domestic disappearance is expected to remain nearly static, although exports are expected to increase slightly in the coming year. Total supplies of corn approach 12 billion bushels, however, and even with increased exports, projected carry-over into the next crop year is more than three-fourths of a year's use.

Despite the smallest U.S. wheat harvest in seven years, a record 4.03 billion bushels will be available during 1986/87. The outlook for wheat usage is more favorable, as prices are at their lowest levels in eight years. Export activity is expected to rise due to the lower prices, but total exports will still likely be the second smallest in the last seven years. Total disappearance during 1986/87 is expected to exceed production, leaving reduced but still large old-crop stocks going into 1987/88.

The large supplies of both feed and food grains will mean government loan rates will likely serve as both the floor and ceiling for grain prices.

Livestock

Forage supplies are abundant throughout Wyoming and much of the rest of the country. Normally, this would imply that producers would begin to expand their beef herds to use this excess forage acreage. However, with poor returns, financial difficulties, and only modest incentives likely, cattle numbers may only stabilize in the coming year.

The mid-year cattle inventory indicated the fifth consecutive year of cattle liquidation. Current cattle numbers indicate the lowest cattle supplies in over two decades. Total beef supplies could fall even further as the industry makes the transition from liquidation to expansion in the next couple of years. In recent years we have been slaughtering a higher percentage of cattle and increasing average weights, so the beef supply has remained high. In 1987, we could see a reduction in slaughter and actually begin producing less beef.

If the industry does start rebuilding cattle numbers in 1987, calf prices should continue their upward trend through the next three to four years. The July 1 inventory estimated the 1986 calf crop to be 40 million head, 1 million below 1985 and the smallest since 1960. I would anticipate that the calf crop will continue to decline in 1987 and possibly 1988. Due to the biological lag from the time a producer decides to keep a heifer to put back into the herd and the heifer starts producing calves, it will take several years before the nation's cow herd stabilizes.

Feeder cattle prices should continue to strengthen throughout the remainder of 1986 and into 1987. Ample hay and forage, coupled with low feed grain prices, will put upward pressure on the reduced supply of feeder cattle. Producers who anticipate ample grass next summer and have ample hay supplies this winter should be able to turn a profit by holding calves through the winter and taking them to grass next summer.

Given the current grain, meat supply, and demand situation, the beef cattle industry will continue to face uncertain times. To survive the current financial problems and be in a position to take advantage of an upswing in prices, cattlemen need to be formulating alternative production and marketing strategies.

Robert D. Carver
University of Wyoming

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Job Openings Outlook

Chiropractors

Chiropractic medicine places emphasis on the function of the nervous system and how it relates to health and disease. Chiropractors help their patients regain and/or maintain good health by diagnosing and treating spinal related disorders. Physical diagnosis, laboratory studies, and x-rays aid in the diagnosis. The most widely used method of treatment is spinal manipulation, although physiotherapy and physiologic therapeutics are also used.

Chiropractors must be licensed by the State Board of Chiropractic Examiners. Licensing requirements include at least two years of pre-professional chiropractic study including courses in inorganic chemistry, organic chemistry, microbiology, and physics, graduation from a recognized school of chiropractic, and a certificate from the National Board of Chiropractic Examiners on the applicant's grades on a national standardized test.

The outlook for chiropractors varies with every community. Factors affecting the outlook include community awareness and acceptance, allied health professionals' attitudes, influx of new doctors, and general economic conditions. Studies indicate that the inclusion of chiropractic services in Medicare, public awareness of the nature of care, and the emphasis on natural means of maintaining health may increase the demand for chiropractic services.

Some chiropractors begin in salaried positions to acquire experience and funds needed to establish their own practice. First-year earnings in an established practice average $1,250-1,670/month depending on size of clientele, reputation, and overhead. Those establishing their own practice often operate at a loss or low income the first year or so due to high setup costs.

Marian Jean Dlugolecki
Information Analyst

Dietitians

Dietitians and nutritionists are health care professionals who specialize in the study of food and its relationship to health. Dietitians provide dietary counseling on modified diets by planning nutritious meals and by monitoring a patient's nutritional status. Work is performed in kitchens and adjoining offices, often in consultation with patients, doctors, and other staff members. Work includes planning menus and diets for therapeutic treatment, supervising the production of food, and managing personnel. Major areas of specialization among dietitians include administration, education, research, and clinical and community dietetics.

There are four ways to prepare to be a dietitian. The first involves three years' pre-planned experience. This requires working full-time as a non-registered dietitian and passage of an exam at the end of three years. Work must be sponsored and must meet the criteria set by the American Dietetic Association (ADA). Second is the Coordinated Undergraduate Program (CUP) in dietetics. Enrollment in a four-year program is required, with experience being gained during the semester in each of the junior and senior years. Third includes a bachelor's degree plus an internship. This program must meet the ADA's eligibility requirements for entering a 6-month to 12-month internship upon obtaining a bachelor's degree in foods and nutrition or institutional management. Passage of a comprehensive exam is required. The final route to prepare to be a dietitian is to obtain a master's degree and have six months of approved, qualified experience, plus pass a comprehensive exam. Although all of the above are appropriate routes of training, employers prefer a bachelor's degree in home economics, specializing in foods and nutrition or institutional management, and completion of an approved internship program. Registration is not manadatory, but is generally required for employment.

Factors influencing the demand for dietitians include the number of hospitals and nursing home facilities, growth of community health programs, continued nutrition research, and tighter controls on federal food service programs. These sources are largely dependent on public support. Limited training opportunities have resulted in out-of-state recruitment of trained dietitians. Many dietitians are employed on a contract basis, working as a consultant for more than one institution. Opportunities for consultants may be better.

Average entry wage for a registered dietitian is between $18,000-22,800/year, depending on employer. Average maximum wage is between $25,000-35,000/year. It usually takes five to 10 years to reach the maximum pay level. Wages are generally higher for those who are employed on a contract basis rather than those in full-time employment in an institution.

Juanita M. Ackerman
Information Analyst

For more information contact the Wyoming Career Information System, Box 3808, University Station, Laramie, Wyoming 82071, or phone (307)766-6189.

Wyoming Coincident Indicators Index

Judging from the second quarter 1986 Wyoming Coincident Indicators Index, (WCII), the Wyoming economy continues to wither. The WCII is derived using economic variables, the movements of which tend to coincide with movements in the overall economy. It is computed by the Division of Research and Statistics, Department of Administration and Fiscal Control.

The WCII is a composite index which uses four economic variables: 1) Wyoming total sales and use tax collections in 1972 dollars; 2) Wyoming state total insured wages paid in 1972 dollars; 3) Wyoming state total employment; and 4) an industry index comprised of one economic variable from each of Wyoming's three major industries. The three industries are agriculture, mining, and tourism, and the respective variables are: 1) prices received by Wyoming farmers and ranchers for all commodities; 2) Wyoming drilling rig count; and 3) Wyoming motor fuel gallonage sales.

Presented on the accompanying graph are the plots for three times series: one for the index using seasonally adjusted data, one for the index using data which has not been seasonally adjusted, and one for the U.S. Coincident Indicator Index. The unadjusted index is presented to show the seasonality of the Wyoming economy. The U.S. index is shown in order that it might be compared to the Wyoming index. The more important Wyoming index, and the one with which all further analysis and description will be concerned, is the seasonally adjusted index. In this index, turns up and down are caused by factors other than seasonality. The base month is January 1972, which has an index value of 100. An index value doesn't have any meaning in and of itself but is valid only when compared to another value from the same index.

All of the variables used to compute the index were down from the second quarter of one year ago. The seasonally adjusted index for June was down 5 percent from one year before, but more importantly, it was down 4 percent just since March 1986. Though all variables contributed to this drop, the industrial index variable contributed more significantly than the other variables. The industrial index is a composite variable of active oil well drilling rigs, the Wyoming agricultural commodities price index, and total sales of motor fuels and gasohol in gallons. With oil prices down, the number of active drilling rigs in the state was off over 50 percent from the first quarter of 1986 to the second quarter.

The outlook for the rest of 1986 doesn't look much better. With oil prices expected to remain at roughly current levels, weak demand for Wyoming energy resources will continue. Weak prices in energy resources and continuing weakness in the agricultural sector mean reductions in basic employment. This in turn reduces total personal income, and subsequently, sales and employment in the service sectors of the Wyoming economy.

Steve Furtney, DAFC

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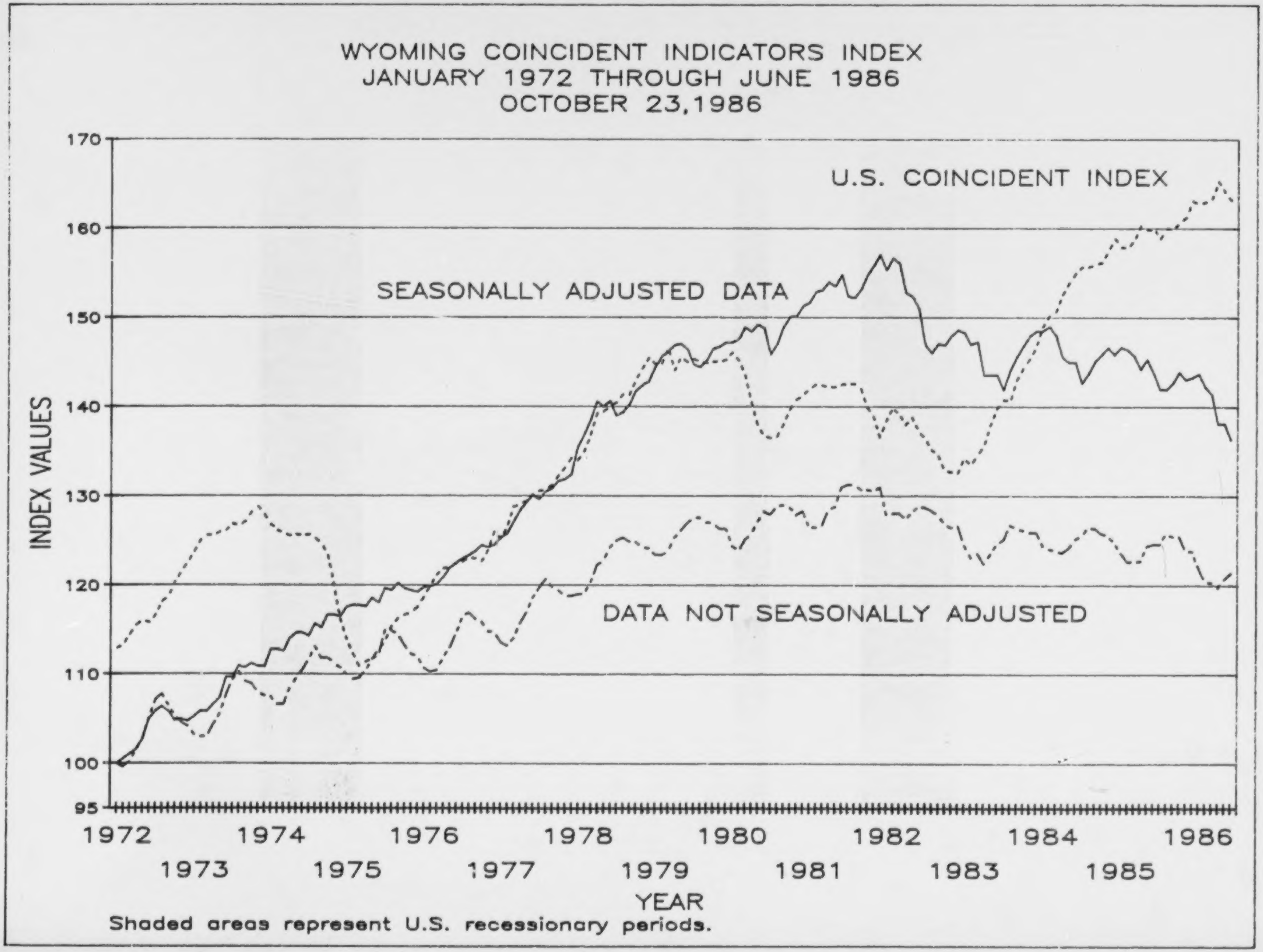

WYOMING COINCIDENT INDICATORS INDEX
JANUARY 1972 THROUGH JUNE 1986
OCTOBER 23,1986

Shaded areas represent U.S. recessionary periods.

INDUSTRY PROFILE

Industry Profile

Economic Development: Quest of the '80s

INTRODUCTION

As reverses have been suffered in Wyoming's basic economic sectors since 1981, increasing attention has focused on ways in which the state might improve the prospects of future economic stability through a broad-based program of "economic development." The quest has included both strategies for retaining existing businesses and for "diversifying" into wholly new activities not subject to the caprice of low oil prices or sagging red meat demand.

Yet concerns for the state's economic future are not new. In some ways, the activities of the 1980s represent only the latest in a series of efforts to breathe new economic life into the state. However, with the rise of the mining sector to a position of absolute pre-eminence during the 1970s, and with the collapse of prices that followed during the 1980s, it could be argued that current concern for economic development has taken on an urgency hitherto unknown.

The purpose of this article is to explore economic development in the state. This will be accomplished first by presenting an historical overview of economic development activities and then by describing some of the resources that have been mobilized for economic development during the 1980s.

HISTORICAL PERSPECTIVE

The first economic development activities in the state were almost inadvertent. Prior to 1840, fur traders and trappers exploited the abundant wildlife in the region. While such men had little inclination to establish permanent settlements, the knowledge they gained of the area's geography, weather, game, and plant life was transmitted to others who did intend to settle.

The pioneer trails also provided some impetus to early development. "Road ranches" sprang up to serve the needs of those heading toward California and Oregon, some of which developed into permanent ranching operations. The U.S. Army also established its presence along the trails.

The most important agent in Wyoming's early economic development was the U.S. Government. The Pacific Railway Act of 1862 established in law the principle of creating a railway system that would link the nation from ocean to ocean. The act was passed during the Civil War partly as a means of linking the territories of the Union, but the act also fulfilled a national yearning for a railroad that spanned the continent.

The Pacific Railway Act of 1862 granted the railroad companies 10 sections of public land for each mile of track laid and first mortgage loans in the form of government bonds. Under the even-more liberal terms of the Pacific Railway Act of 1864, the land grants were doubled to 20 sections for each mile of track laid. The land subsidies also included mineral rights. At the same time, the government loans were changed from first mortgage to second mortgage status. In all, the Union Pacific received about $27 million in government loans, enough to cover about half its construction costs.

Wyoming was born in a boom. The Union Pacific brought some 16,000 people to the state during the late 1860s, with as many as 6,000 men employed in building the railroad. Communities sprang up from the wake of the development. Some, including Cheyenne, Laramie, Benton, Green River, Bryan, and Bear River, were large enough to be classified as cities.

In addition to providing employment during the state's first heavy construction boom, the railroad was the author of economic development in other ways. For one thing, the railroad fostered development in what would become the state's basic economic sectors. In 1866 and 1867, coal production began a long climb as coal was stockpiled in advance of the railroad (which entered the state in 1868). Commercial coal-mining was limited to southern Wyoming until 1887, along the route of the Union Pacific. The first of the Union Pacific mines was opened at Carbon in 1868, located in the Hanna Coal Field of Carbon County. By 1887, mines opened elsewhere in the state as railroads ventured into new territories. By 1893, all the major coal-producing regions in the state were in production.

The coming of the Union Pacific also prompted further expansion in the livestock industry, providing both a market for products and a means of transporting products to distant markets. Railroad cattle shipments increased through the 1870s. In 1873, 286 carloads of cattle were shipped; by 1877, that number had increased to 1,694. By 1881, more cattle were shipped from the Union Pacific's Pine Bluffs station alone than had been shipped from the entire state in 1877.

But the boom, in typical fashion, did not last. As the railroad construction moved westward, towns such as Benton dried up and eventually disappeared. Efforts during the 1870s to promote further immigration to lands opened by the railroads were largely unsuccessful. Those who had seen the territory by train reported that Wyoming seemed as a barren wasteland. (Interestingly, a Travel Commission spokeswoman related similar difficulties in attracting tourists in 1986. According to a recent AP dispatch, Kathy Carley was quoted as saying, "A lot of people think we are badlands--rough and rugged and nothing [to] do.") The winter of 1871-1872 was so severe and received such widespread publicity that

Table 3: Local Economic Development Organizations and Key Contacts.

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Campbell County
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Carbon Bldg., Suite 325
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Fred Schroeder, Chairman
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Table 3: Local Economic Development Organizations and Key Contacts (continued).

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Teton County
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West Yellowstone, MT
Naomi Soll
West Yellowstone
Chamber of Commerce
West Yellowstone, MT 59758

Source: Economic Development and Stabilization Board.

previous reports of a mild climate were largely discounted. Overstressing Indian dangers was another barrier to immigration. Some went so far as to recommend that the southeastern portion of the Wyoming Territory, including the Union Pacific, be annexed by a more placid Colorado.

Over several decades, the U.S. Government had attempted to promote settlement of its western lands through various acts. The Preemption Act of 1841 made it possible to secure 160 acres of land at a cost of $1.25 per acre. The Homestead Act of 1862 granted the head of a family 160 free if the family would remain on the land for five years. The Timber Culture Act of 1873 provided an additional 160 free acres. Finally, the Desert Land Act of 1877 provided 640 acres at a cost of $1.25 per acre. But the acts as applied to Wyoming were intrinsically flawed. Assuming a rancher had taken advantage of all the acts, he would have accumulated 1,120 acres--barely enough to support 40 cows. As a result, ranchers simply used whatever government land they needed. Hearings conducted by the U.S. Public Lands Commission in 1879 and 1880 found that only three of 23 members enrolled by the Wyoming Stock Growers Association were willing to pay five cents per acre for title to the lands they were using.

A cycle of "boom and bust" associated with heavy construction and the coming of the railroad was visited upon cattlemen during the 1880s. By 1880, Cheyenne had developed into the cattle capital of the world. It was the great meeting place of southern trail drives and northern cattlemen. It was also reputed to be the wealthiest city per capita in the world.

Among the cattle kings of Wyoming was Alexander Swan, who carved out a vast kingdom that stretched from near Ogallala, Nebraska, to Fort Steele, Wyoming, and from the Union Pacific Railroad to the North Platte River. Among other things, Swan was a pioneer in upgrading the quality of cattle on the Wyoming range.

Cattle prices in 1882 were at their highest levels since 1870, and higher than they would be again during the territorial period. By 1887, however, the cattle boom collapsed. The collapse was the result of several factors, including drought, a severe winter, and generally overcrowded range conditions. In addition, the powerful Swan failed, due to weather-related losses and generally loose management practices. When Swan failed, he carried a collection of investor associates and hangers-on with him. Reorganized and under new management, the Swan Company by 1910 had sold its cattle and turned to raising sheep.

From a development standpoint, a number of problems plagued early Wyoming agriculture. As noted, land laws designed by Congress were often unrealistic, given the climatic and forage conditions of the Wyoming range. In addition, ranchers themselves could not agree on a common strategy for use of the range. This was especially evident in feuds that developed between cattlemen and sheepmen.

What might be considered an early attempt to "diversity" Wyoming agriculture was hastened by passage of the Dry Farming Homestead Act of 1910-1911. The measure doubled the amount of free land available under the Homestead Act of 1962. At the same time, the Wyoming State Legislature created the Board of Immigration in 1911 to promote dryland farming and other activity in the state. Promotional letters mailed to prospective new residents were not above considerable hyperbole: "There is absolutely no question as to the fertility of the soil in Wyoming," Board Commissioner Roy W. Schenck was fond of writing. "It is rich and will produce enormous yields as compared with farms of the Middle West." Schenck claimed that he had influenced 175 persons to move to Wyoming as a result of his campaign, and that the number would have been higher except for Wyoming's exceedly bad reputation. In his report to the legislature, Schneck wrote:

> Regardless of the cause, the fact is apparent to this office that Wyoming has anything but an enviable reputation among prospective homeseekers, immigrants, or investors. This undesirable impression apparently has been growing greater instead of less.
>
> Hundreds and even thousands of letters and personal interviews have convinced us that investors of capital are reluctant to examine a proposition when informed that it is located in Wyoming. Homeseekers or farmers are ready to consider locating in any other state in the Union, or even in Canada, before giving Wyoming a thought as even a possibility. These are facts that we do not like to hear but they are true nevertheless. What is the matter?
>
> There is only one answer. The people of Wyoming have not properly attended to their own advertising. They have allowed outsiders to gain their only knowledge of the state through reading lurid tales of the barrenness of our deserts, the outlaw of our citizens and the general undesirability of everything pertaining to the State. In other instances fake mining, irrigation, and oil propositions have been launched, and thousands have gained their estimate of Wyoming by being swindled. Misleading information has been spread broadcast for the past twenty or thirty years...(from T.A. Larson, History of Wyoming, p. 363).

In 1913, the Wyoming Legislature cut off Schenck, his board, and his programs without a further penny.

As indicated, development in the mining sector was spurred by the coming of the railroad. Coal mining became increasingly important, with production levels exceeding 7 million tons per year by 1910. In 1910, there were 42 producing mines in the state with 8,106 employees. Other minerals, such as gold and silver, fared less well. While strikes were common, most such booms were short-lived. Among the frequent causes of mining busts were low-grade ores, overspeculation, depletion of ore deposits, and high transportation costs.

After 1910, demand for Wyoming oil increased. Speculative fever ran rampant in Casper during 1917 and 1918 as development proceeded in the Salt Creek Field. Each new discovery was quickly followed by scores of new companies which issued millions of shares of mostly worthless stock.

During the 1920s, with the widespread availability of automobiles, considerable attention focused on state tourism. Nearly every town set up municipal campgrounds and plotted strategies for holding tourists overnight. The average tourist, it was noted, hurried across the state to Yellowstone National Park, with hardly a care for seeing anything in between. In 1929, Yellowstone drew about 260,000 visitors, increasing to over 300,000 by 1935. One attraction that slowed the tourist flow was Cheyenne Frontier Days, but other communities were hard pressed to develop similar attractions.

Most of the economic stabilization efforts undertaken during the Great Depression were instituted by the U.S. Government under its "New Deal" programs. At the end of 1933, 20,000 Wyomingites were unemployed and one-fifth of the state's residents were receiving some form of public assistance. Drought compounded the state's distress in 1933, 1934, and 1936. The U.S. Government purchased starving cattle and sheep, slaughtering most as unfit for human consumption. Animals in better condition were transported to more favorable areas, and the government provided loans to troubled farmers and ranchers. In 1935, the Agricultural Adjustment Administration paid farmers for reducing wheat and sugar beet acreages, as a means of stabilizing the price.

Many major construction projects were completed in Wyoming under various federal programs. Highway construction boomed, and major dam and irrigation projects were completed. In 1934, the Civilian Conservation Corps (CCC) operated 19 camps in the state. The Rural Electrification Administration increased the number of farms and ranches served with electricity from 527 in 1935 to 3,300 in 1939. In all, the U.S. Government spent $141,185,431 in Wyoming during the period from 1933 to 1939, the highest per capita spending in any state except Nevada and Montana.

While Wyoming provided raw materials such as coal and oil to the war effort during World War II, it lacked the defense manufacturing jobs available in other states. As a result, many people left the state in search of employment elsewhere. By the end of the war, Wyoming had the smallest "war" manufacturing-industries payroll in the U.S. Among the reasons often cited for Wyoming's failure to attract such industries were high freight rates, a lack of water, and the small size of the state's labor force.

One problem faced by local planners during the war years was related to how returning servicemen could best be reintegrated into the economic life of the state after the war ended. In December 1943, Governor Lester Hunt named 32 persons to the Wyoming Postwar Planning Committee in order to address such concerns. The committee estimated that returning servicemen would require 24,000 jobs. Among the areas that seemed to hold the brightest hopes for postwar jobs were private enterprise, highway construction, reclamation projects, and public building projects. In January 1945, the committee was deactivated. Despite a somewhat premature end to the committee's efforts, the state suffered only minor reconversion unemployment.

Between 1950 and 1970, a variety of groups in Wyoming became increasingly concerned with the relatively slow rate of economic growth in the state. One particularly disturbing trend was a continuing outmigration of younger persons who could not find suitable employment inside the state. Increased manufacturing was often cited as a remedy, if indeed such manufacturing could be attracted. Employment in manufacturing was consistently among the lowest in the fifty states.

A number of agencies were created during the period to investigate ways in which the economy might be strengthened, including the State Natural Resources Board (1951), UW's Division of Business and Economic Research (1955), and the State Department of Economic Planning and Development (1969). Barriers to developing the manufacturing sector cited in a 1959 report, *Resources of Wyoming and Their Relation to Industrial Development*, by O.D. Turner of the University of Wyoming, included a lack of markets for products, a lack of skilled labor in the state, a lack of financial assistance to manufacturing firms, and an unfavorable climate.

The Department of Economic Planning and Development (DEPAD) was formed in 1969, replacing the former Natural Resources Board. The primary function of the department was to attract new industries and to nurture existing industries. "Ambassador trips" were initiated in an attempt to interest firms in locating new facilities. In general, such attempts were unsuccessful.

With the energy boom of the 1970s, DEPAD's function shifted. The main concern became coping with the amount of development slated for the state's energy resources, rather than with attracting additional businesses. The boom itself was not a thing of the state's making, but rather was a response to emerging world market realities that followed the Arab Oil Embargo of 1973.

With the post-boom recession, renewed interest focused on economic development and diversification in the state. Effective July 1, 1985, DEPAD was replaced by the newly created Economic Development and Stabilization Board. The agency consists of three divisions responsible for matters related to economic development, mineral development, and water development. The board itself consists of one member from the agricultural sector, two from the business sector, two from the financial sector, one from the tourist sector, one from the mining sector, one member at large, and the governor.

CURRENT EFFORTS

A variety of forces have been mobilized recently in efforts to promote economic development and stability in the state. The state government includes the newly created Economic Development and Stabilization Board, which is specifically charged with fostering economic development. At the same time, virtually every community has some type of private or governmental effort to accomplish the same ends on a local basis.

The Economic Development and Stabilization Board provides assistance through block grants and loans. The Community Development Block Grant Program provides funds for community development and improvement projects, while the Economic Development Loans Program provides grants to local communities, which in turn, can loan money at below market rates to local business ventures. The general purpose of the loan program is to create and retain permanent jobs in a community, and to leverage private lending dollars.

In addition to some funding, the Economic Development and Stabilization Board provides a variety of specialized services. The agency provides a state "Main Street" coordinator to work with selected communities in revitalizing downtown business districts. In 1985, the legislature appropriated $86,000 for the Wyoming Main Street Program. The Community Development Program provides professional economic planning and development services to local communities. New business contacts are developed and new markets are investigated by staff personnel, and computer-aided research activities explore the market dynamics for Wyoming products. The agency also provides expertise to local governments on matters ranging from impact analyses to bonded indebtedness statuses. (The agency's mission, as interpreted by Executive Director Bill Budd, is described in greater detail elsewhere in this publication.)

The role of the Wyoming Community Development Authority (WCDA) in matters pertaining to state economic development has evolved over time. The WCDA was originally created in 1974 as a mechanism for mitigating problems related to energy development and for providing housing associated with the boom. In 1978, the WCDA was recreated, and in 1984, WCDA became involved in economic development activities. The WCDA cannot finance projects that would create a competitive disadvantage for existing businesses. Rather, the WCDA focuses on creating basic employment, assisting with value-added projects, and financing improvements to existing businesses.

A variety of federal sources also are available to assist in economic development

Table 4: Recipients of Economic Development Block Grants as of September 22, 1986.*

Grantee	Project	Amount	Date (FY)	Description
Albany County				
Laramie	Lutz Cabinets Purchase	$50,000	85	Wood Cabinet Manufacturing
Laramie	Compu Systems	50,000	85	Computer Software
Albany County	Test Drilling	13,000	86	Testing for Titanium Tetrachloride
Big Horn County				
Big Horn County	Republican Rustler	12,000	85	Newspaper/Printing Business
Lovell	Miller Fabrication	35,000	85	Welding Heavy Equipment
Lovell	Murphy Ford	30,000	86	Car Dealership
Carbon County				
Encampment	Hammer Sawmill, Inc.	105,000	84	Lumber Mill
Saratoga	Jack Alexander, Ltd.	240,000	84	Furniture Manufacturing
Crook County				
Sundance	Sundance Blue	81,700	85	Furniture Manufacturing
Fremont County				
Lander	Wyoming Wood Products	80,000	84	Lumber Mill
Lander	Rocky Mt Enterprises	100,000	84	Outdoor Camping Equipment
Riverton	Two Day Cover	35,000	84	Printing Heads
Lander	Centennial Airlines	250,000	85	Purchase Airplane
Lander	Lander Design Corp.	65,000	85	Outdoor Space Heaters
Riverton	AMRAM	105,000	85	Electronic Mail Boxes
Lander	Planning Grant	15,000	86	Aid Indian Tribe w/Fed. Contract
Lander	Lander Design Corp.	125,000	86	Space Heaters
Riverton	The Tannery	20,500	86	Fishing Equipment-Fly Tying Equip.
Goshen County				
Torrington	Wyoming Supreme Beef	25,000	86	Packing Plant Feasibility Study
Laramie County				
Laramie County	Wyott Corp.	250,000	86	Mnf. Commercial Kitchen Equip.
Lincoln County				
Lincoln County	Freedom Arms	200,000	84	Gun Manufacturing
Diamondville	Frontier Ford Eq. Purch.	70,000	85	Car Dealership-Shop Equipment
Natrona County				
Natrona County	Santech	130,000	85	Navigational Equipment
Natrona County	Meadowlark Mushrooms	41,275	86	Mushroom Farm
Niobrara County				
Lusk	Rock Quarry Test Drill	13,760	86	Test for Limestone, Quartzite, Dolomite
Park County				
Cody	Facade Improvement	50,000	86	Rehab. Downtown Buildings
Sheridan County				
Sheridan	Little Horn Hydroelec.	25,000	86	Feasibility Study for Hydroelectric Power
Sweetwater County				
Rock Springs	Plm Railcar Main. Co.	180,000	85	Railroad Car Maintenance Shop
Teton County				
Teton County	Life Link Inc.	100,000	84	Outdoor Recreation Equipment
Teton County	Life Link Inc.	25,000	85	Outdoor Recreation Equipment
Uinta County				
Mountain View	Bridger Valley Lanes	90,000	84	Bowling Alley
Evanston	Downtown Revitalization	100,000	85	Rehab Facades Commercial Bldgs.
Uinta County	Wyoming Downs	100,000	85	Horse Racetrack

Source: Economic Development & Stabilization Board.

* Grants are made to local governments, which in turn make loans to local business ventures.

efforts. The Small Business Administration assists towns in forming Community Development Corporations, as well as providing financial advice to small businesses. The SBA's Wyoming Business Development Centers provide business counseling and training in all aspects of starting and managing a small business. Centers are open full-time in Casper, Gillette, Rock Springs, and Powell, and part-time in Cheyenne, Rawlins, Evanston, and Laramie. In addition, the SBA provides small business loans through participating Wyoming banks.

The Economic Development Administration provides technical assistance and funds for projects, primarily in communities that have suffered extreme economic distress. Housing and Urban Development funds are funneled through the State Economic Development and Stabilization Board, while the Farmers Home Administration offers business and industrial loans (the agency's Community Facility Loans are especially applicable for sewer and water projects). The Bureau of Indian Affairs provides economic development funds for the state's Indian tribes.

The Federal Job Training Partnership Act is administered through the state government to local communities. The program provides opportunities for on-the-job training, with employers reimbursed 40 percent to 50 percent of the salaries of persons participating in the program. The program also trains displaced or dislocated workers, provides clerical training for Aid-to-Families-with-Dependent-Children recipients, and provides some funding for the relocation of workers. Funds available to local communities depend upon community size. In Albany County, for instance, approximately $250,000 was provided through the program in 1985, with $194,000 spent in on-the-job training programs. At the local level, program funds are handled through Job Service Centers.

The Ucross Foundation was established in 1981 with the purpose of encouraging creative leadership. In a joint effort between the Ucross Foundation and the State of Wyoming, the Wyoming Future's Project came into existence in March 1985. The project was intended to be a public-private partnership that encouraged broad-based participation in analyzing the state's future options.

As part of this effort, SRI International was commissioned to conduct an analysis of key economic, institutional, and social trends in the state. SRI examined seven sectors of the state's economy. At the same time, the Ucross Foundation held roundtable discussions to consider the many challenges and opportunities existant within each sector of the state's economy. Several recommendations resulted in October 1985. Among other things, the group recommended a state investment strategy to support business development and targeting of regional businesses, improvement in state air service and better targeting of tourism prospects, and improved outreach programs by the University of Wyoming.

In terms of problem areas, the group noted that key Wyoming products are threatened by uncertain demand and severe competition, and that the state's educational system lends insufficient support to " homegrown" business development. In the tourism area, the group said the state's travel industry was fragmented and lacks the cohesiveness necessary for the development of industry leaders.

Another noteworthy effort launched principally by private initiative was Pacific Power & Light's "Hat Off to Wyoming" campaign. The effort was designed to assist economic development via a public information campaign promoting the state's assets. The program was an attempt to inform Wyoming residents about opportunities offered by the state and to educate out-of-state businesses and industries about the relative advantages of operating in Wyoming. The State Economic Development and Stabilization Board is an active partner with PP&L in the program.

In agriculture, the UW College of Agriculture currently is investigating ways to "add value" to state agricultural products. The study is designed to identify potential activities within various market stages that might feasibly be performed in Wyoming, rather than in other states. Several groups, including the University of Wyoming, the State of Wyoming, the Wyoming Stock Growers Association, and the Wyoming Beef Council, joined forces to initiate the "Wyoming Lean Beef" program. The research aim of the project was to provide the information necessary to develop management, processing, and marketing programs that would permit ranchers to sell cattle directly from range to slaughter, and thus increase ranch income in the state.

In addition to such broad-scope activities, many economic development efforts have sprung up at the local level, often through such vehicles as municipal governments, county governments, and area chambers of commerce. In Evanston, for example, local businesses committed $39,400 for television commercials in Salt Lake City during the summer of 1986 in an effort to promote local tourism. The amount raised locally was matched by the Wyoming Travel Commission.

Given the nature of the state's economy, considerable difference of opinion exists concerning the potential effectiveness of state and local initiatives devised for economic development. Due to the preponderant weight of the mining sector, a sector over which the state exercises little influence, some argue that little vitality will exist in the state's economy until worldwide price conditions for commodities such as oil improve. Others argue that the state can and must develop a more balanced mix of business and industry through deliberate, long-term strategies if the state's susceptibility to renewed periods of boom and bust is ever to be reduced. In any event, finding real opportunities for development and diversification from others imagined wishfully will become matters with major public policy import as the state explores its economic future.

S.T. Mast and Catherine Novotny, IPR

# #

Budd Sees Risks, Challenges in Forging Economic Development Plans

(The following is excerpted from an interview with Bill Budd, executive director of the State Economic Development and Stabilization Board. The interview, which was conducted in September, points out some of the challenges faced by the state in its quest for economic development. Amendment #4 referred to in this article passed during the General Election.)

WQU: First, how do you see the mission of this agency?

Budd: We are a product of the legislature, just barely a year old. We were created to address the problems of economic development, or the lack of economic development, in the state. I see my responsibilities to administer and manage this agency, to do everything we can to enhance the business climate in Wyoming. We want to help existing business, clear up to and including loaning money. We want to do a complete job of soliciting new business, prequalifying them very thoroughly to make sure they are legitimate business and that they will be an asset and not a liability to the state. Once we have made that decision, I think we have to be very careful that we do not subsidize or anyway use the money we have at our disposal to create an unfair advantage. I don't think you can discriminate against one business in favor of another or bring in new business and give them an unfair advantage over businesses already here that are operating on their own capital.

WQU: How is your agency funded and is that funding adequate?

Budd: Well, of course, until and unless Amendment #4 passes we are very severely hampered and restricted because the Wyoming Constitution prohibits the state from directly or indirectly contributing to business with state dollars. So we really have no state dollars we can use at this time. If Amendment #4 passes, we could have an account of up to $78 million. Now, the only money we have at our disposal to use we get from Federal Housing and Urban Development funds. That has been amounting to about $1.5 million a year. That has been handled as 25 percent for community development grants and 75 percent for economic development grants. It has been done in grants to local governments. Local governments can then loan it to local business, or make other disposition of the funds.

WQU: How would Amendment #4 change the scope of your activities?

Budd: It would authorize the legislature to give us money which we could use in direct negotiations with businesses. I have to point out that we are subject to what the legislature says we can do. But I presume we might be able to do such things as purchase land or buildings, make direct loans, or provide loan guarantees. I think Amendment #4 is critical. We have been created by the legislature to help diversify the state's economy, to bring in new jobs and businesses, and to put some life into companies that are having trouble. Unless the agency is fully funded, I don't believe it is worth the cost. All we are doing now is being a pass-through for Federal Housing and Urban Development funds. Anybody can do that.

WQU: Let's switch gears a little and talk about the mining sector, especially the oil and gas segments. Realistically, is there anything an agency of state government can do to foster development there, given the current world price situation?

Budd: I don't think there is anything a state agency can do to directly affect the price of oil. But as the price of any resource begins to get to where it is economically profitable for a company to get back into the market--whether its beef, turkeys, coal or oil--the state certainly can have an effect because of how the industries are regulated. Anything the state can do to minimize the costs related to the enforcement of those regulations will have a direct effect on whether that business will be able to operate profitably or not. I am not talking about relaxing health, safety, or environmental standards. I am talking about streamlining the process. I am talking about making it as easy and as least costly as possible for a business to come to this state and conduct their business in accordance with the regulations adopted by the state. I don't see any distinction between people and business. Some people in the political arena like to distinguish between people and business. I can't make that distinction, I don't believe it is a logical distinction. People make up business. If you're talking about business, you're talking about people. The government is a creation of the people and works for the people. So it just seems logical to me that government should do everything within its power to make it as cost-effective as possible for business to operate.

WQU: Do you think it is your function as director to remove encumbrances to business?

Budd: Yes I do. Until I'm told it isn't, I think that anything that affects the business climate in this state comes under my responsibilities as director of this agency.

WQU: It has been suggested that due to the current price of oil, the state lost more jobs in five months than can conceivably be created during the next five years. Is the mining sector such a predominant force in Wyoming that we are looking at rather narrow limits within which economics development can occur?

Budd: The mineral industry is certainly a major part of the economy. I am very supportive of that industry, and I think it will be a very important part of our economy for many, many years in the future. That does not mean that I think we cannot diversity and bring entirely unrelated business to the state. I think we can.

WQU: What kind of businesses?

Budd: I have no limitations on my thinking there. I think we can attract small manufacturing. I have somewhat of a personal bias, I guess, in that I don't think we're likely to bring in a major manufacturing division of General Motors, employing 8,000 or 10,000 people. But I don't eliminate any kind of business. I think we have an awful lot to attract all kinds of businesses. First, we have the best tax laws in the United States. For business, it is the best tax law, unless you are in the minerals business. We have very productive workers, people who believe in giving you eight hours' work for eight hours' pay. We have things people want, clean air, clean water, outdoor recreation, open spaces, and a good place to raise kids. I don't want to leave the impression that I want to buy every business that comes in with dollars up front. I don't see that as necessary, and I don't think good, legitimate businesses are selling themselves for the dollars they can get up front. They are looking for other things. They may need a few dollars to help them come in, or they may need a tax break for a short time. They need stretched out financing. The banks have become uncompetitive in my opinion. The banks are no longer serving the function that they served for many years as a source of venture capital for legitimate businesses.

WQU: Thirteen of them have gone broke in recent years...

Budd: Sure, but how many businesses have gone broke? A lot more than that. I am sorry the banks have gone broke. But they have to share some of the blame for what they are doing, and the fact that they have gone broke and pulled back so far from the legitimate needs of a successful business makes it very difficult. The business that can go out and borrow a half million dollars on a six-year amortization schedule at 12 percent or 14 percent interest doesn't exist. It is not reasonable to expect that business can pay back the venture capital it needs to get a building and start-up on the short periods that banks in Wyoming want to give them at a high interest rate. It is just not in the cards.

WQU: If the banks don't make venture capital loans, and if the Wyoming Enterprise Fund can't get off the ground, where is the venture capital going to come from?

Budd: I hope it is going to come from the Economic Development and Stabilization Board. I hope we will be in a position to work through the banks, with money and loan guarantees, so that we can utilize the expertise of the banks. But if the banks are not going to make it possible for a legitimate, successful business to locate in this state, then we are going to have to do it.

WQU: There are many organizations involved with economic development, ranging from agencies of government to private groups. How do you get these people going in the same direction, while minimizing regional squabbles? That certainly must present a challenge.

Budd: It is a challenge. I have laid awake quite a few hours since I have taken this job thinking about those very kinds of things. We have to do things that make these groups want to work with us. I can't force them to work with us. Many of them are funded separately, like the LEADER group in Lander funded itself. They are in no way responsible to me, the state, or anyone else. But somebody has to be out front. Somebody has to coordinate these activities. So if you came in here a year from now, I have to be able to say what is going on in the state. We have to be able to keep the communities from competing with one another and shooting down the other guy's deal to make it better for themselves. The only way I can see that happening is if I am able to convince those people that it is in their best interest to work with us. We will be doing things so people want to stay in touch with us, through fair treatment, through intelligent handling, through providing staff to help them with their problems. I am a commonsense type of person. I think that I am perceived that way by the people who know me. I think that is what this job requires, somebody who can listen to different sides and say, "This makes sense. Let's do it this way." Hopefully, these people (involved in economic development activities) will call me. If they don't, if they don't like me and I don't succeed in the majority of cases, then they ought to send me down the road.

WQU: Let's talk a little about tourism as the basis for further economic expansion.

Budd: I think there is a tremendous opportunity to inject some real economic life into the state through programs that encourage tourists to stay longer. If a person stops for an hour, a certain percentage are going to take the kids somewhere for pop, ice cream, or whatever. If they spend enough time, they are not going to be able to make it to Yellowstone Park that night so they are going to stay overnight. All those things create positive economic development in the state. I think that is an area we can get into to help private capital. I want to see private capital. I don't want to see state dollars if we can help it. But if it comes down to the state helping, we would. I have talked to some people about rebuilding Ft. Phil Kearney. We are talking $100,000 or something like that. There are something like 14,000 cars a day that go through the intersection of I-90 and I-25 up there at Buffalo. You don't have to do too much to make a large percentage of those cars want to stop and see something.

WQU: One problem with tourism is that it is highly seasonal. What does a business person do after the tourists go home?

Budd: I don't agree with the SRI report that says we can replace the basic industries with tourism as the answer to our future. I think tourism generally is frosting on the cake. But let me point out that life in many parts of the state--places like Cody, Jackson, Dubois, and even Pinedale--depends heavily on tourism.

WQU: Another problem with tourism is that it lacks the tax base that oil production or other minerals provide.

Budd: Except the second biggest source of revenue in Wyoming is sales tax...

WQU: But the property taxes are much greater on minerals production. Another problem is that mining jobs probably pay five times what service jobs pay.

Budd: Of course, I can carry that to its ultimate. We could sit back, throw up our hands, and say the sky is falling...

WQU: You've heard these arguments.

Budd: Yes I have.

WQU: How do you respond?

Budd: The way I am responding. The minerals industries are here and we hope they are able to compete. We don't control their markets. So we need to build a diverse economy around that industry. Then we have the best of both worlds. Through our legislature, we have seen fit to tax the hell out of the minerals industry. I don't advocate cutting out the taxes, although I think there is reason to look at some of those taxes that may be counterproductive. You know, 100 percent of nothing is nothing. If you tax an industry to the point it can no longer make money, no longer sell its product, and it quits producing, then you sure haven't accomplished anything for yourself. People have also said we don't have any transportation. Hell, we have got railroads in this state, we've got very good highways, and we have trucks that have access to railroads. I don't see it as an unsurmountable problem. We have to explore for the right opportunities. You don't just stick $5 million in somebody's hand to come here and then they stay three years and go down the road to the next guy who will give them $5 million. We are not going to make that mistake.

WQU: If the state gets into the business of providing venture capital at considerable risk, some of that money will simply be lost because the projects will fail. Are you ready for that possibility?

Budd: Sure, I think that is a forgone conclusion. By the same token, when people go out and drill oil wells most of them are not successful. The ones they do get, pay off in the end. The good ones override the cost of the bad ones. I think the same philosophy is going to be here. We are going to lose some, we are going to make some bad investments. But if we go out and bring in a business that grows and catches on, pretty soon you have 400 people working in private enterprise in Laramie, Wyoming. The option is to sit, do nothing, and hope the world is going to come to Wyoming. It isn't.

S.T. Mast, IPR

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Entrepreneurial Spirit Pushes Up from the Grassroots

With the downturn in Wyoming's economy, the news in recent months has become a rather gloomy litany of low prices, revenue shortfalls, and shrinking labor markets. The tall timbers of the state's economy--mining, agriculture, tourism, and heavy construction--are not the robust giants of years past. Yet like the floor of a forest, here and there the sun shines through, and a flower grows.

The spirit of entrepreneurship is alive in Wyoming. The scale is often modest, ideas that are limited in their economic impacts. But a desire to forge new economic opportunities is pushing up from the grassroots.

Take Rick Jackson, for example. For three years, Jackson ran a custom cabinet shop in Sundance. Then he got the idea to make furniture from material no timber man in his right mind would want--pine damaged by the Rocky Mountain pine beetle. Jackson began developing products from the wood, with a distinctive blue tint evidence of beetle damage. The first Christmas, Jackson sold 10 gun cabinets locally.

"The governor said the pine beetle was a more serious threat than acid rain," Jackson said. "I used that as my business plan. I am going to take care of these trees which are a fire hazard to the Forest Service. We are cutting everything the loggers don't want, which is the dead, bug trees. In fact, the logging companies will reject anything that has 20 percent or more blue in it. We reject anything that has less than 80 percent blue in it."

So Jackson went to the banks and city officials. They scratched their heads and frowned. "Even the bankers did not know how to finance a manufacturing project when they are from an agriculture community," Jackson recalled. "They knew if you had 50 cows what your profit margin was going to be in a year, but if you had 50 employees in a manufacturing plant, they did not know how to even attempt negotiating that."

But Jackson was persistent. After 18 months of negotiations and repeated explanations, Jackson arranged financing through the city and the State Economic Development and Stabilization Board. Jackson said the lack of information about financing options was a big problem initially. "The city officials did not know how to apply for grants for me. I had to go and find out, come back to them, write the letter for them, have them sign it and send it," he said.

Jackson would like to see a more cohesive state plan for providing such information to future entrepreneurs. He would extend that to bankers as well. "I went before different boards of different banks to explain my point because they really did not know how to finance a manufacturing plant. It would be helpful if the state could give them the information they need to do more than finance agriculture loans, so they are able to diversify their loans," he said.

Today, Jackson is looking to the future with high expectations. His 10 employees manufacture "high-end quality wood furnishings, no particle board of plywood, 100 percent Wyoming grown and Wyoming produced." Even with 10 employees, Jackson said his firm, Sundance Blue, Inc., is one of the largest, private employers in town. With hopes of tripling the workforce by the end of the year, Jackson sees the prospect "of being the largest (private employer) in the entire county shortly."

Rick Trost, a Casper entrepreneur and founder of WyoMin Corporation, took an idea that grew out of his work developing land portfolios for mineral companies. Part of his work required a knowledge of maps and land status. Trost decided there was a need for county maps, available to the public, detailing access and ownership status. "There was definitely a problem," Trost said. "Access is a major problem in Wyoming because of the intermingling of our land status."

Trost began in small steps, as his professional obligations would allow. He examined the feasibility of his product, the printing requirements, the availability of status information, and potential markets. Then he began close to home, with maps for Natrona and Converse counties. "One thing that makes the maps unique is that they provide the name, address, and telephone number of private owners on the maps themselves," Trost said. The maps are also keyed in color, where many are not. In developing the maps, Trost searches federal, state, and county records to establish ownership. If the records don't correspond, further investigation is required to establish ownership. Public access routes are highlighted in color; the maps also display the boundaries of Game & Fish Department deer and antelope management areas.

The combination of game boundaries, access routes, and ownership status has been especially popular with hunters. But many others have found the maps useful as well. "We have civil defense using the maps in their vehicles, county fire departments, sheriff departments. The Game & Fish people use them, BLM resource people use them, and the ranchers love them. Ranchers typically have the worst maps in the world. They may know every fencepost, but as far as having actual maps, they really don't have any," Trost said.

In addition to maps of Natrona and Converse counties, Trost has maps for Campbell and Carbon counties close to completion. He would like to produce maps for every county in Wyoming as quickly as finances and circumstances allow. Interest also has been expressed in doing similar maps for other states, as well as in specialized user maps, according to Trost.

Trost felt his maps could be used to promote tourism in the state. State agencies, such as the Recreation Department and the Travel Department, could purchase area-specific advertisements and local features of interest could be highlighted on the maps.

Money made from the maps has been plowed back into the project, but Trost thinks the future looks bright. "We have certain economic bases," said Trost. "We have minerals, we have tourism, we have recreation. We can start from the grassroots. We can grow from the inside out. Everything I am doing is promoting Wyoming, in a respect, and is building from within."

Don Bain, president of Wyoming Woolworks and Sundry, also hopes to "build from within" using another traditional Wyoming base, agriculture. Bain markets various types of raw wool, processed wool, mohair, and wool-mohair blends from his shop in Baggs, Wyoming. The wool is purchased locally from growers in the Snake River Valley. The Bains also market finished wool products, such as sweaters, hats, and scarves.

In starting up, Bain said his biggest problem was in identifying loans or grants that might be available. "Where do you go for operating capital or to purchase products?" Bain said. "This, to me, was a complete void." Bain suggested that the state could provide an information clearinghouse of such information. Marketing is also a continuing challenge, especially in distant markets, he said.

Clay Arbogast, president and general manager of Bioenergy Corporation, includes in his marketing hopes much of the globe. Bioenergy Corporation, developer of the Sunscan solar generator, is scheduled to go into production in Buffalo. "Sunscan," according to Arbogast, "provides power to isolated areas where conventional utilities are not economically feasible. Some of the uses for Sunscan are domestic water supplies, livestock watering systems, greenhouse climate control communications systems, instream flow measurements, weather information systems, air quality testing, and electricity to remote mountain cabins."

In developing his product, Arbogast said it would have been a decided advantage to have had some general guidelines regarding how a person should best proceed with research and development of a new product. This would include the basic planning concept "of how to develop something from the concept in your mind through the blueprint draft, through prototypes and control system testing, condition testing, and on-site application testing, clear up to the point where we are now into marketing," he said.

Arbogast has contacted the University of Wyoming about marketing assistance, as well as specialized marketing companies in the East. "The reception on Sunscan so far has been fantastic," Arbogast said. "It looks to me like its definitely something that is going to be used in the Third World."

In Carbon County, the mining sector has suffered serious losses. Yet some firms, by not relying on the fortunes of the local economy, have found ways to diversify and thrive.

Jack Alexander Limited, a Saratoga furniture manufacturer, has continued to grow by marketing its high-quality office furniture throughout the United States. The company evolved from a preexisting construction business that did considerable cabinet work as part of its operations.

"We found that the wood office furniture business had grown 12 percent a year for the last four years," said Al Welton, president of the firm. "That was one of the things that made up our mind to go this route." Welton described his growth in sales as "phenomenal." The first month in full operation sales approximated $29,000. By the third month, sales went over $200,000.

Welton said Wyoming offers many more advantages than disadvantages as a place for his business. Saratoga, he said, has abundant available housing and people who need jobs. The firm has been able to take advantage of the Job Training Partnership Act and has been able to receive 40 percent to 50 percent reimbursement on wages during the firm's training period for new employees. Saratoga is also well situated geographically, according to Welton. "People like to live in Wyoming. They like to hunt and fish. We have the best fishing in the world. It is just not hard to get people to live in Saratoga, Wyoming," he said.

The dry Wyoming climate is also a real plus in manufacturing wood office furniture. "You can manufacture in a dry climate and go to a damp climate without problems," Welton said. "If you manufacture in a damp climate where the humidity is high, then go to a dry climate, you have shrinkage and cracks."

Inadequate transportation links and distances from markets are often cited as barriers to economic development in the state. However, such factors have not been problems for Jack Alexander Limited. Indeed, for the firm's national marketplace, Wyoming is well situated. "We are within about 1,000 miles of our furthest eastern market, and the same in the West Coast and Texas. We are pretty centrally located for what we want to do. And of course, we use our own vans to deliver the furniture, and we backhaul the raw materials, so I would say it (transportation) is not any problem at all," Welton said.

Welton said there is also good potential for the manufacture of high-quality chairs, much in the manner that the firm manufactures desks and tables. "I have the shopping center, that is about half empty, in Hanna that would be good to start up another project," he said. "If I had the money, and the backing, I would go into the chair business right along with this. But I just cannot handle it as an individual. There is a great market out there in chairs. The market is just as big as in wood office furniture, and the profit is good..."

In 1984, R.L. Hammer Lumber & Timber Products began automating its Encampment facilities into a state-of-the-art saw mill operation which substantially increased production while reducing manpower requirements. Like Jack Alexander Limited, R.L. Hammer sells its products (one-inch-dimensional lumber) in markets other than Wyoming; in this case, particularly on the East Coast. The company was able to expand in part because of the economic development assistance provided by Carbon County Planner Frank Alguire, who helped arrange gap financing through a mix of Community Development Block Grant, Small Business Administration, and Hammer family resources. At present, the company employs approximately 40 persons.

"The project has been tremendously successful," Alguire said. "This year, the mill had sold all its products as of the beginning of the summer, so they have been putting a lot of effort into getting out the product that is already sold. They are in a real good position, and they have been able to maintain their commitments without any problems."

Alguire said the success of the saw mill had implications for other communities in the state as well, in that the potential for economic growth may already exist in selected local businesses. "I think in general that local entities involved in economic development should spend some time taking a look at their communities, taking a real hard look at businesses working double shifts or weekends, and discussing with the owners of those plants whether there might be a need to expand in terms of production capabilities and employment," he said.

While conceding that business was good at present, Robert Hammer, principal stockholder in the firm, said that Forest Service regulations made timber operations difficult and the future uncertain. He said the biggest difficulty facing the company was not production, or even marketing, but uncertainties concerning the future availability of good-quality timber.

Not all projects have been as successful as Jack Alexander or R.L. Hammer. One much publicized project that has run into difficulty is the Wyoming Steel project in Douglas, which organizers had hoped would result in a $23-million mini-steel mill and a full production workforce of approximately 250. Organizers had hoped to begin work on the plant this fall, but such plans have been delayed.

"One problem with trying to finance a project in this way (through private investment) is that everything is contingent upon everything else," said Bob Dahl, president of Jackalope Economic Development, Inc. He likened the process to a row of dominoes, in which one falling piece can topple all the rest. At this point, Dahl said, the financing is "very tentative" and prospects for securing the necessary financing could be rated about 50-50.

S.T. Mast, IPR

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Venture Capital Viewed as Essential for State Economic Development

Okay, so you have a good business idea. The world is full of good ideas. The trick is to make money with your idea, to turn your idea into the nuts-and-bolts of real production and tangible output. You need somebody with the money, and something of a penchant for taking risks, to invest in your idea. Then maybe you'll both make money. That, in a nutshell, is how venture capital works. Within the context of current concerns for economic development, if ideas are the sparks that will ignite the economic fires, then venture capital is the fuel that will keep the fires going.

Venture capital is not a single type of financing. Rather, it can take various forms at different points in a company's growth and development. Typically, venture capitalists earn a place on the firm's board of directors with their investments and a substantial share of the company's stock. Seed financing is an initial type of venture capital investment. Seeding financing might be provided to prove the worth of a concept, to develop the product, or to conduct market research. If the outcome of such efforts is positive, such financing might be used to develop a business plan. Next, startup financing might be provided to introduce the product on the market.

Once a company has demonstrated the feasibility of its product, a venture capital firm might provide funds to initiate full-scale manufacturing and sales, or first-stage financing. Second-stage financing typically would provide working capital for initial expansion in a firm with growing accounts receivable and inventories. To this point, the company probably hasn't shown a profit yet, but its potential is promising.

A venture capital firm could provide third-stage, or mezzanine, financing as the new company approaches a breakeven point, or shows a profit, and major expansion is undertaken. Such capital could be used for such things as plant expansion, marketing, working capital, or advanced product development. If the company becomes successful, venture capital could be provided if the firm makes plans to go public. Venture capital could also be used to help the new company acquire other companies through acquisition financing, or it could be used as a management/leveraged buyout to acquire a product line or business.

In Wyoming, the most critical need for venture capital as a tool for economic development appears to be in financing business start-ups and initial expansions. While there appears to be no shortage of venture capital nationally, such capital generally has not found its way into Wyoming. During the "Governor's Conference on Venture Capital" held in January, a panel of experts advanced several reasons for the lack of venture capital interest in the state, including a lack of good investment opportunities (or at least, projects that are too small to attract established venture capital firms) and a shortage of research facilities that support business development.

Other reasons cited for Wyoming's inability to attract venture capital were similar to barriers often cited to economic development generally. Such factors included difficult weather conditions, transportation deficiencies, the small size of Wyoming's labor force, and legal "disincentives" to business development.

Present difficulties, however, do not mean that nothing will change in the future, given the right kind of planning and effort. In the area of venture capital, Wyoming Financial Securities of Casper has attempted to create a venture capital fund for investment in Wyoming, the Wyoming Enterprise Fund. Galbreath Financial Services of Denver would serve as general partner in the fund; limited partnership interests are being offered to individual investors, including major utility, transportation, and communications firms doing business in the state. If successful, the fund will have $8 million available for investment in Wyoming projects. Wyoming Financial Securities, which has a joint-venture-type arrangement with Galbreath Financial Services, would be actively involved in the management of the fund.

Jim Peck, president of Wyoming Financial Securities, said there is an "incredible need" for a venture capital fund if the state is going to expand and diversify its business base.

Peck said when people think about new business financing, they usually think about bank financing. The problem, he said, is that banks are not rewarded for taking risks because the spread between a bank's cost of money and the charges passed through to borrowers isn't wide enough to assume much risk. "They are designed to be capital facilitators, not risk takers," he said. As a result, a bank typically would provide only part of the financing, with the borrower left to raise the remainder elsewhere. "That is the classic place for the venture capital firm to step in," Peck said.

Another problem is that money from classic mortgage lenders may never reach perfectly good deals, a situation that is sometimes aggravated by Wyoming's small population. Such lenders, Peck said, often employ a series of screens because of their volume of loan requests. "A lot of screens have to do with population mass," he said, "say 250,000 minimum (in a community) to get involved in an office-building financing. Obviously, that means there is no financing in Wyoming if you get that kind of screen."

In addition to providing capital, Peck said a venture capital firm "brings a lot more than the dollars to the table. They bring widespread business-management knowledge to the table, because a typical venture capital professional has been intimately involved in several dozen different kinds of businesses and has seen what makes businesses work, what makes a business fail, and has access to a real cadre of talent."

As envisioned, the Wyoming Enterprise Fund typically would be involved with new business expansions rather that start-ups. Equity capital requests would be reviewed by managers of the fund. If approved, an investment commonly would take the form of a stock purchase. It might be possible for the fledging company to repurchase its stock at a later date, in which case the venture capital firm would make its money on the rise in value of the company. If the company is very successful, stock might be offered for sale to the public.

When investments are made, Peck said, one assumes "they will all be heroes." But such is usually not the case. Out of 15 investments, Peck estimated that three or four are likely to be "absolute lemons," perhaps two or three will be big winners, and several more will be among the "living dead"--investments that are neither real winners nor real losers. As a result, the Wyoming Enterprise Fund is envisioned as a venture capital "pool" so that risk can be spread across several investments.

"It is terribly important to get that diversification," Peck said. "That is why we concluded that we had to raise a venture capital pool, as opposed to funds for each specific project. Investors simply were not interested if they couldn't get some diversification."

Peck believes venture capital funds should be managed through the private sector rather than through governmental auspices so that politics do not get the better of real economic worth.

"The public sector is really nailed with the politics of picking the thing," he said. "They'll get a call from a legislator saying 'I want you to loan money to my company or a company that is in my constituency.' They get pressures that are away from the arena of true economic worth. If there is any absolute in the world of economic development, if it ain't a good deal, it ain't a good deal, and no amount of money is going to make it a good deal." The private sector, he suggested, is more apt to make decisions solely on a project's merit; the role of the state, he said, should be to make capital available for private-sector management and investment.

Another advantage to private-sector management is that venture capital professionals will take a strong interest in the future of the company, right down to day-to-day management, Peck said. Venture capital people will sit on the company's boards, will frequently serve as chief financial officers for a period of time, or might direct the marketing group through critical phases--roles the government is unlikely to play.

"They aren't going to do that for a couple of reasons," Peck said. "They haven't got the training for it, and they haven't got the motive for it. The venture capital firm has got the motive because the only way the venture capital firm makes money is if the company makes money. They get nothing unless the company grows and is a success. Then they get rewarded because the value of their investment has increased, and they get to realize that investment. Their motive is the purest of motives, and that's profit."

The Wyoming Enterprise Fund has had difficulty raising the $8 million needed to begin operations, partly because private individuals do not have the available resources they had in years past and partly because some major firms doing business in the state have been slow to respond. The Wyoming Community Development Authority has pledged $3 million to the fund if its investment is matched, but the fund is all or nothing--either $8 million will be raised or there will be no fund, according to Peck.

Whatever the mechanism, Peck said adequate venture capital is absolutely critical if the state hopes to achieve any degree of meaningful economic development.

"That's the issue," he said. "You do not do economic development without venture capital."

S.T. Mast, IPR

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ECONOMIC CHANGES

ECONOMIC CHANGES

(Editor's note: The purpose of this section is to point out areas of the Wyoming economy in which noteworthy changes occurred, or in which existing trends were significantly accentuated, during the latest reporting period).

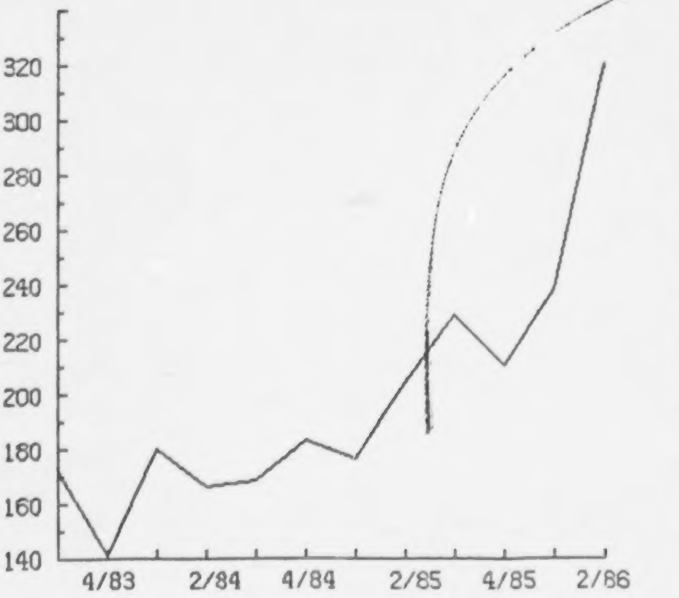
Changes in the Wyoming active rig count, the number of personal bankruptcies, and the number of industrial electrical connections highlight the Update's second quarter statistics.

The quarterly active rig count has once again plummeted. The second quarter figure of 25 rigs represents the lowest count recorded during the Update's 12-quarter reporting period. It shows a drop of 56.14 percent from the first quarter of 1986.

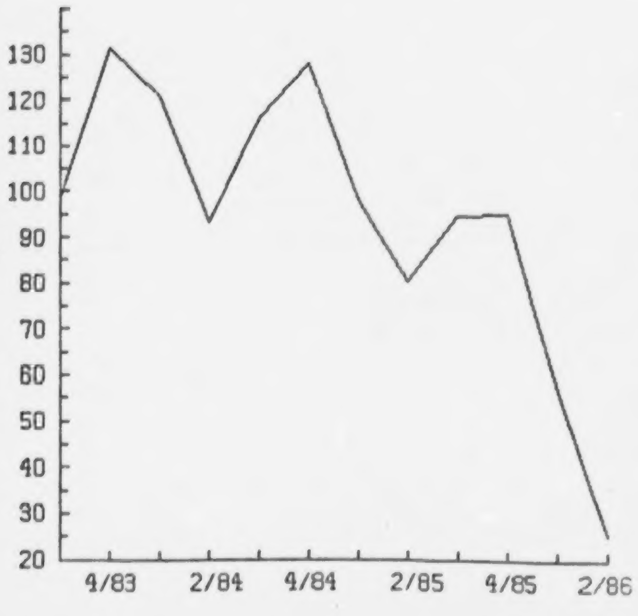
The number of personal bankruptcies reached 321 during the second quarter of 1986. The 34.86 percent increase from the first quarter of 1986 represents the largest increase during the 12-quarter reporting period. It is also of interest to note that the number of business failures has increased from 74 in the first quarter of 1986 to 83 in the second quarter of 1986. The figure also represents the highest count during the 12-quarter reporting period.

The number of industrial electrical connections dropped from 2,927 in the first quarter of 1986 to 2,811 in the second quarter of 1986. This is the lowest figure recorded during the 12-quarter reporting period. At the same time, however, the number of commercial electrical connections increased from 33,606 in the first quarter of 1986 to 33,885 in the second quarter of 1986. This represents the highest figure recorded during the 12-quarter reporting period.

Personal Bankruptcies



Active Rig Count



Industrial Electrical Connections

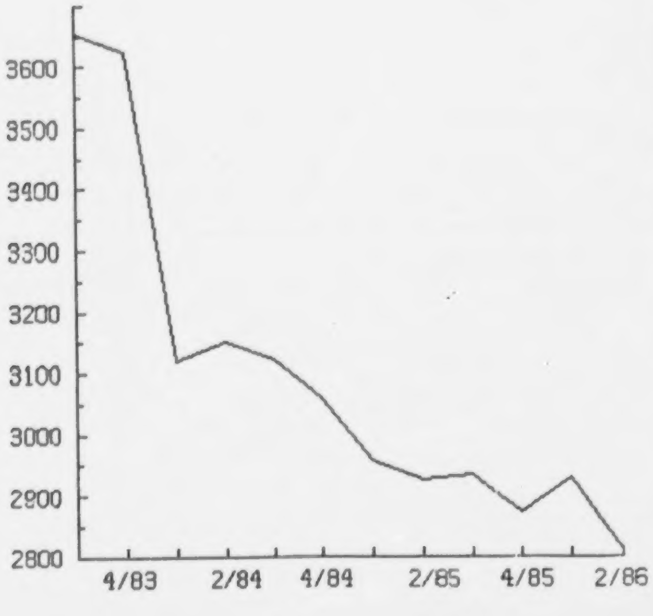


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Table 5: Agriculture[1]

Calendar Quarters	3/83	4/83	1/84	2/84	3/84	4/84	1/85	2/85	3/85	4/85	1/86	2/86
1. Timber Cut in Wyoming National Forests (MBF)	35941.	47574.	21261.	7625.	48671.	63055.	23591.	6564.	35705.	57834.	27236.	10067.
Price Indices[2] (1967=100)												
2. Wyoming Crops, Prices Received-Latest	280.	280.	269.	265.	254.	255.	257.	260.	256.	270.	260.	240.
3. Wyoming Crops, Prices Received-Average	268.	279.	270.	270.	255.	253.	254.	259.	260.	267.	262.	252.
4. U.S. Crops, Prices Received-Latest	260.	262.	267.	276.	260.	240.	246.	236.	216.	226.	213.	212.
5. U.S. Crops, Prices Received-Average	255.	258.	266.	275.	271.	251.	243.	239.	224.	219.	214.	217.
6. Wyoming, All Commodities, Prices Received-Latest	239.	244.	252.	242.	254.	248.	253.	243.	242.	234.	242.	239.
7. Wyoming, All Commodities, Prices Received-Average	233.	239.	251.	250.	246.	249.	254.	253.	237.	243.	236.	246.
8. U.S., All Commodities, Prices Received-Latest	248.	256.	265.	262.	252.	247.	246.	235.	219.	234.	222.	221.
9. U.S., All Commodities, Prices Received-Average	247.	249.	264.	264.	259.	249.	247.	237.	225.	230.	223.	222.
10. Wyoming Livestock, Prices Received-Latest	227.	233.	247.	235.	254.	246.	252.	238.	238.	223.	237.	238.
11. Wyoming Livestock, Prices Received-Average	223.	228.	245.	243.	244.	247.	254.	250.	230.	236.	228.	244.
12. U.S. Livestock, Prices Received-Latest	240.	251.	264.	251.	247.	253.	246.	235.	222.	243.	230.	230.
13. U.S. Livestock, Prices Received-Average	242.	241.	264.	256.	251.	249.	251.	236.	227.	240.	232.	228.
14. Prices Paid by U.S. Farmers-Average	325.	327.	333.	336.	334.	332.	332.	332.	329.	329.	330.	326.[3]

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[1] First time readers of WQU should refer to the "Format" page (in back) for an explanation of abbreviations and table formats.
[2] The index for the last month (latest) of each quarter, along with the average of the three monthly indices of each quarter.
[3] This figure is for the month of April. This index is now reported in the months of January, April, July, and October.

Sources: Series 1: United States Forest Service. "Timber Cut and Sold, Convertible Products." Region 2 and 4 reports published quarterly.
Series 2-15: Wyoming Crop and Livestock Reporting Service. Bi-weekly Ag Statistics.

Table 6: Banking and Finance

Calendar Quarters	3/83	4/83	1/84	2/84	3/84	4/84	1/85	2/85	3/85	4/85	1/86	2/86
1. Total Bank Loans and Leases Financing Receivables (T$)[1]	*****	*****	2313197.	2359492.	2368731.	2352704.	2356267.	2348277.	2296857.	2226477.	2173437.	2108551.
2. Total Bank Deposits (T$)	3683748.	3789387.	3747828.	3812354.	3790977.	4005456.	3808654.	3908435.	3959810.	4048702.	3908134.	3797038.
3. Total Non Interest-Bearing Deposits (T$)[1]	*****	*****	657189.	734297.	723344.	742392.	652223.	643908.	687128.	689811.	624421.	620064.
4. Savings and Loan Mortgage Loans (T$)[2]	775159.	775795.	767125.	775396.	771560.	806660.	780644.	806897.	949722.	929668.	826697.	817750.
5. Savings and Loan Deposits (T$)	966113.	1006927.	1051271.	1087036.	1111213.	1142593.	1161848.	1193339.	1183564.	1166220.	1139851.	1137374.
6. Prime Interest Rate[3]	11.00	11.00	11.21	12.60	12.97	11.06	10.50	9.78	9.50	9.50	9.10	8.50

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[1] During the first quarter of 1984, the Wyoming State Bank Examiner began publishing it's quarterly report ("The Abstract Report of State and National Banks in Wyoming") in a slightly different format. IPR will therefore be altering the following banking and finance data series: total bank loans and total demand deposits. Beginning in the first quarter of 1984, data for total bank loans will include lease financing receivables; data for total bank demand deposits will be replaced by figures for noninterest-bearing deposits. For comparison, the reader can refer to past issues of the WQU.

[2] Only members of the Federal Home Loan Bank Board are included.

[3] Rate is for the last month of the quarter.

Sources:		
	Series 1-3:	Wyoming State Bank Examiner Quarterly Report.
	Series 4 and 5:	Federal Home Loan Bank of Seattle, Monthly Report. Comparative statistical analysis of member institutions.
	Series 6:	U.S. Department of Commerce, Bureau of Economic Analysis. Survey of Current Business. Published Monthly.

Table 7: Business Conditions

Calendar Quarters	3/83	4/83	1/84	2/84	3/84	4/84	1/85	2/85	3/85	4/85	1/86	2/86
1. New Domestic Corporations	366.	309.	359.	359.	332.	273.	308.	307.	248.	283.	308.	301.
2. New Foreign Corporations	331.	292.	260.	249.	259.	244.	224.	259.	279.	217.	251.	223.
3. Total New Corporations	697.	601.	619.	608.	591.	517.	532.	566.	527.	500.	559.	524.
4. Business Failures	52.	58.	59.	64.	67.	68.	70.	78.	58.	72.	74.	83.
5. Value of Business Failures ($)	535473.	-8163171.[1]	17789116.	14081414.	11774068.	12763251.	-25485776.[1]	23761569.	-2394988.[1]	8266910.	-933393.[1]	-2898465.
6. Personal Bankruptcies	172.	141.	180.	166.	169.	183.	176.	204.	229.	211.	238.	321.

[1] Assets exceed liabilities.

Sources: Series 1-3: Secretary of State. New and Foreign Corporations. Monthly report.
Series 4-6: Cheyenne Credit Bureau. Wyoming bankruptcy cases, business failures, and value of failures. Weekly publication.

Table 8: Construction

Calendar Quarters	3/83	4/83	1/84	2/84	3/84	4/84	1/85	2/85	3/85	4/85	1/86	2/86
1. New Residential Dwelling Units	1002.	685.	481.	935.	642.	368.	380.	670.	628.	535.	389.	394.
2. Value of Residential Dwellings Constructed (M$)	60.3	40.0	28.4	54.4	37.9	23.0	24.3	46.8	42.3	35.4	20.9	24.8
3. Value of Nonresidential Construction (M$)	48.2	59.9	11.5	30.6	36.9	80.0	33.0	75.8	32.1	17.1	14.2	33.8
4. Building Permits Issued in Selected Wyoming Cities	3701.	2138.	2025.	3892.	3546.	2438.	1713.	3315.	3753.	2872.	2547.	3979.
5. Value of Authorized Construction (T$)	68715.	51924.	29471.	42320.	36344.	35282.	23474.	83920.	193451.	15695.	21484.	49454.
6. Mortgage Interest Rate[1]	12.08	11.94	11.56	11.61	12.03	12.05	11.42	11.31	10.69	10.47	10.01	9.74

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[1] Conventional first mortgage for new home purchase. U.S. average for last month of quarter.

Sources: Series 1-3: F.W. Dodge Division of McGraw-Hill. "Dodge Local Construction Potentials." Published monthly.
Series 4-5: Institute for Policy Research. "Local Construction Reports." Survey of authorized construction in selected cities conducted monthly.
Series 6: U.S. Department of Commerce, Bureau of Economic Analysis. Survey of Current Business. Published monthly.

Table 9: Consumers

Calendar Quarters	3/83	4/83	1/84	2/84	3/84	4/84	1/85	2/85	3/85	4/85	1/86	2/86
1. New Truck Registrations	3417.	4363.	3927.	4418.	4102.	4574.	3581.	4052.	5187.	3915.	3343.	3650.
2. New Car Registrations	3671.	3483.	3083.	3741.	3676.	3397.	3012.	3752.	4868.	3177.	3200.	3804.
3. Wyoming Personal Income[1] (M$)	5968.	6082.	6089.	6240.	6332.	6373.	6419.	6623.	6639.	6704.	6715.	INA
4. US Disposable Income (B$)	2367.	2429.	2502.	2554.	2606.	2724.	2739.	2818.	2800.	2846.	2935.	2979.
5. US Personal Income[1] (M$)	2754946.	2831537.	2918793.	2985650.	3053166.	3107659.	3156982.	3193455.	3207892.	3268061.	3304609.	INA
6. Latest US Consumer[2] Price Index (1967=100)	300.8	301.5	303.3	306.2	312.1	312.2	315.3	318.7	320.5	323.4	321.4	323.0
7. Quarter's Average US CPI	299.5	301.4	303.1	305.2	310.0	312.1	313.9	317.7	319.7	322.4	323.0	321.6
8. Liquor Sales (T$)	8455.	9863.	6622.	7478.	8180.	9554.	6360.	7538.	8931.	9526.	6293.	7500.

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[1] Revised series. Business Week, the previous source for monthly personal income for Wyoming and the U.S., has discontinued its series. Personal income data will subsequently be collected from the Bureau of Economic Analysis, U.S. Department of Commerce. Readers should be cautioned that the two series are not comparable.

[2] Number shown is for the last month of the quarter. CPI shown is the index for wage earners and clerical workers, not the CPI-U. Beginning with the data for January, 1985, the index is affected by a change in methodology used to compute the homeownership component.

Sources: Series 1-2: R.L. Polk and Company Motor Statistical Division. "National New Vehicle Registration Service." Published monthly.
Series 3,5: U.S. Department of Commerce, Bureau of Economic Analysis. Survey of Current Business. Published quarterly.
Series 4,6,7: U.S. Department of Commerce, Bureau of Economic Analysis. Survey of Current Business. Published monthly.
Series 8: Wyoming Liquor Commission. Sales data are reported to IPR.

Table 10: Employment and Labor[1]

Calendar Quarters	3/83	4/83	1/84	2/84	3/84	4/84	1/85	2/85	3/85	4/85	1/86	2/86
1. Civilian Labor Force	276925.	256902.	246802.	258507.	261039.	249652.	242092.	256819.	266519.	246570.	248020.	257190.
2. Employment	253149.	239275.	226897.	240970.	247678.	236455.	223081.	238436.	250115.	228368.	222222.	231996.
3. Unemployment	23776.	17627.	19905.	17537.	13360.	13197.	19011.	18383.	16403.	18203.	25798.	25194.
4. Unemployment Rate	8.6	6.9	8.1	6.8	5.1	5.3	7.9	7.2	6.2	7.4	10.4	9.8
5. Initial Claims Filed	8657.	11117.	10502.	7271.	5255.	8237.	13108.	8047.	6991.	12467.	15095.	13146.
6. Applications Received	12144.	9359.	10290.	11541.	11375.	9685.	11106.	12017.	11424.	11347.	14321.	14968.
7. New Non-Agricultural Openings	7992.	5528.	4679.	9779.	12905.	8655.	7004.	11450.	12640.	9685.	7059.	10595.
8. New Non-Agricultural Placements	10529.	6446.	5946.	9111.	10348.	8331.	6308.	9597.	9656.	9163.	6348.	8490.
9. Miners' Average Weekly Hours	41.8	41.2	42.8	43.2	42.9	43.5	41.4	43.9	43.3	44.5	43.7	41.9
10. Miners' Average Weekly Pay ($)	521.24	519.71	547.39	558.70	552.01	572.47	570.76	591.61	574.69	600.17	601.10	520.39
11. Miners' Average Hourly Wage ($)	12.47	12.60	12.78	12.94	12.87	13.16	13.79	13.47	13.27	13.50	13.76	12.42

[1] The most recent year's data are preliminary.

Sources: Series 1-11: Wyoming Employment Security Commission. Labor Force Trends. Published monthly.

Table 11: Energy and Mineral Production

Calendar Quarters	3/83	4/83	1/84	2/84	3/84	4/84	1/85	2/85	3/85	4/85	1/86	2/86
1. Wyoming Coal (TST)	29784.	27401.	32020.	28964.	31806.	34908.	36243.	31854.	32228.	30508.	33671.	29421.
2. U.S. Coal (TST)	204117.	198085.	227129.	223657.	246163.	188471.	220652.	220673.	225484.	211487.	224966.	214567.
3. Wyoming Oil (TBPD)	325.	318.	311.	325.	350.	338.	333.	332.	337.	334.	335.	334.
4. U.S. Oil (TBPD)	8680.	8700.	8737.	8831.	8879.	8942.	8877.	8910.	8901.	8895.	8877.	8851.
5. Wyoming Natural Gas (MCFD)	1050.	1373.	1588.	1376.	1285.	1417.	1601.	1297.	1201.	1348.	861.	INA
6. U.S. Natural Gas (MCFD)	44703.	48924.	52912.	49076.	47968.	49888.	51347.	45317.	44400.	47203.	34008.	INA
7. Active Rig Counts in Wyoming-Average[1]	99.	131.	121.	93.	116.	128.	99.	81.	95.	96.	57.	25.

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[1] Due to numerous requests, we will begin reporting the active rig counts in Wyoming for the quarter. Monthly data back to January, 1974 is available from our data base upon request.

Sources: Series 1,2,5, and 6: U.S. Department of Energy. Energy Data Reports. Gas date are published monthly, and coal data are published weekly.
Series 3-4: The Oil and Gas Journal. U.S. and Wyoming Oil Production published weekly.
Series 7: Petroleum Information Corporation, Hughes Tool Company. Monthly Average Active Rig Counts in Wyoming.

Table 12: Government

Calendar Quarters	3/83	4/83	1/84	2/84	3/84	4/84	1/85	2/85	3/85	4/85	1/86	2/86
1. Sales and Use Tax Collections (T$)	53361.	55424.	55954.	51151.	57132.	59570.	54966.	50917.	63025.	65957.	53816.	47695.
2. Violent Crime[1]	409.	241.	221.	318.	350.	334.	304.	275.	350.	319.	292.	380.
3. Nonviolent Crime[2]	5319.	4219.	3728.	4486.	4790.	4170.	4170.	4969.	5120.	4212.	4294.	5485.
4. Stolen Property (T$)	3005.	2892.	2065.	2627.	2856.	2487.	2244.	2437.	3443.	2447.	2529.	3713.
5. Stolen Property Recovery Rate	40.3	46.1	42.7	42.9	51.5	45.5	51.9	38.5	51.6	41.0	34.2	54.0
6. Percent of Crimes Cleared[3]	24.2	23.5	30.9	22.4	22.9	30.7	28.3	24.0	25.1	28.9	28.2	24.7

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[1] Murder, negligent homicide, forcible rape, robbery, aggravated assault.
[2] Burglary, larceny, auto theft.
[3] Clearance of a crime indicates resolution of a complaint by arrest or other extraordinary means.

Sources: Series 1: Wyoming Department of Revenue and Taxation, Sales and Use Tax Division. "Net Collections by Business Class by County." Published monthly.

Series 2-6: Uniform Crime Reporting Center for Criminal Justice Research, Division of Criminal Identification, Office of the State Attorney General. "Crime in Wyoming." Published quarterly.

Table 13: Tourism

Calendar Quarters	3/83	4/83	1/84	2/84	3/84	4/84	1/85	2/85	3/85	4/85	1/86	2/86
Visitors, National Parks and Monuments												
1. Yellowstone	1653211.	133088.	63927.	536765.	1561475.	100802.	66776.	592059.	1500133.	103487.	79077.	607923.
2. Grand Teton	1462761.	238442.	136459.	522640.	1373523.	206891.	130583.	517614.	1299635.	181840.	138794.	530991.
3. Devil's Tower	160953.	16894.	9037.	72461.	131447.	15145.	8841.	68885.	135061.	12157.	9237.	86167.
4. Fossil Butte	9120.	4206.	246.	4246.	9107.	1762.	115.	4254.	10434.	1213.	205.	4367.
5. Fort Laramie	56592.	7665.	2352.	27529.	54704.	5527.	2625.	26185.	49165.	3921.	2027.	28120.
6. Big Horn NRA-South[1]	56419.	29358.	18715.	45104.	67403.	26388.	31533.	56612.	77495.	46073.	18574.	53634.
Other Tourism Indicators												
7. Traffic Count (Avg. # of Vehicles/Day)	167385.	97696.	85780.	125371.	169579.	101625.	88135.	131520.	166903.	98463.	90397.	119613.
8. Hotel, Motel, and Camp Sales Tax (T$)	2017.	1397.	979.	1084.	2178.	1389.	932.	1070.	2136.	1370.	862.	1185.
9. Gasoline Sales (TGL)	107116.	79911.	63980.	85891.	102748.	77108.	66798.	83529.	101676.	74304.	62891.	43580.[2]

[1] Big Horn Canyon N.R.A. is only partially in Wyoming. Only visitation for the Wyoming part is shown.

[2] This data is for the months of April and May only.

Sources: Series 1-6: Monthly visitor use reports of the National Park Service.
Series 7: Traffic Survey Unit - Planning Branch, Wyoming State Highway Department. "Selected Recording Stations Traffic Counter Data." Published monthly.
Series 8: Wyoming Department of Revenue and Taxation. "Sales and Use Tax Summary by County by SIC Major and Minor." Reported monthly.
Series 9: Petroleum Association of Wyoming. Monthly Gasoline Gallonage Report.

Table 14: Utilities[1]

Calendar Quarters	3/83	4/83	1/84	2/84	3/84	4/84	1/85	2/85	3/85	4/85	1/86	2/86
1. Residential Electric Connections	178762.	178535.	179967.	179536.	178837.	179123.	179451.	181034.	179423.	179609.	179931.	179179.
2. Residential Electric Consumption (TKWH)	294755.	395182.	562483.	437086.	359496.	484523.	542962.	395900.	348469.	510291.	502703.	342033.
3. Commercial Electric Connections	30533.	31404.	32340.	32462.	32874.	32738.	33058.	33730.	33782.	33603.	33606.	33885.
4. Commercial Electric Consumption (TKWH)	353743.	342219.	485953.	437983.	455181.	468378.	504376.	474481.	497271.	512748.	499198.	425035.
5. Industrial Electric Connections	3655.	3624.	3119.	3150.	3122.	3059.	2957.	2926.	2933.	2872.	2927.	2811.
6. Industrial Electric Consumption (TKWH)	1397176.	1016334.	1456749.	1911229.	2049121.	2479998.	1572877.	1904448.	2159299.	2626516.	1514740.	1313271.
7. Other Connections[2]	3164.	2791.	2759.	3155.	3438.	3165.	2916.	3145.	3219.	3112.	3451.	3285.
8. Other Consumption (TKWH)	46427.	13306.	6129.	13775.	50031.	10385.	5321.	19238.	57385.	10970.	11110.	41061.
9. Residential Natural Gas Connections	74638.	75037.	76263.	75081.	74802.	75736.	76112.	75456.	74772.	75826.	76146.	75383.
10. Residential Natural Gas Consumption (MCF)	2871311.	8444801.	15230399.	8356402.	2804867.	9293855.	14912809.	6892581.	2723293.	9855048.	12757931.	6847671.
11. Commercial Natural Gas Connections[3]	6710.	6817.	6881.	6817.	6770.	6859.	6882.	6785.	6651.	6737.	10926.	6651.
12. Commercial Natural Gas Consumption (MCF)[3]	1792146.	4865053.	9496853.	5231096.	1656779.	5481602.	9319095.	4495896.	1640628.	5816481.	8227469.	5366969.
13. Industrial Natural Gas Connections	97.	98.	94.	95.	96.	93.	91.	92.	96.	93.	91.	91.
14. Industrial Natural Gas Consumption (MCF)	9291988.	13201149.	13193998.	25099377.	12505089.	26405131.	9633325.	12378588.	6370238.	9827421.	10188011.	5077804.
15. Other Natural Gas Connections[3]	46.	45.	45.	46.	46.	46.	46.	47.	42.	42.	42.	40.
16. Other Natural Gas Consumption (MCF)[3]	5323.	267.	235.	905.	5882.	336.	138.	1739.	8033.	176.	149.	1095.

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[1] Some small utilities do not report, hence the data are slightly less than actual state totals. The data are consistent. The same utilities' reports are included in each figure.

[2] "Other" includes agriculture, municipal, and other public.

[3] Figures for the first and second quarter of 1983 reflect a change in the authority connections/consumption made by the Northern Utilities. Prior to January 1983, the company listed public authority under the category of other natural gas connections/consumption. Northern Gas now combines public authority connections/consumption with their commercial natural gas connections/consumption.

NOTE: Due to divestiture, Mountain Bell is no longer able to provide IPR with the telephones in service figure; because Mountain Bell accounts for the bulk of telephone mainline service in Wyoming, IPR has decided to discontinue the telephone data series.

Sources: Series 1-18: Reports to IPR by selected electric and natural gas utility companies. Survey conducted monthly.

Average Rents by City, Second Quarter 1986*

City	Apartment	Trailer Lot	House	Mobile Home
Cheyenne	$323.17	$132.00	$438.53	$276.16
Buffalo	269.34	106.25	313.50	241.25
Casper	280.92	141.47	384.98	280.70
Cody	310.65	130.00	368.59	301.35
Douglas	297.67	120.00	385.40	227.71
Evanston	349.27	188.00	466.48	381.32
Gillette	327.60	175.00	487.37	318.91
Greybull	223.89	76.50	239.35	224.00
Jackson	365.00	100.83	458.92	242.22
Kemmerer	385.50	135.00	438.46	366.50
Laramie	311.92	129.67	380.83	261.07
Lusk	247.47	90.00	233.33	208.00
Newcastle	280.82	87.50	276.67	265.00
Pinedale	335.71	152.48	369.44	294.80
Rawlins	272.44	130.00	328.95	278.57
Riverton	263.77	113.75	307.45	240.00
Rock Springs	380.94	160.38	466.25	370.36
Sheridan	277.50	130.00	297.75	255.00
Sundance	240.00	80.00	315.00	255.79
Thermopolis	291.07	110.00	295.83	247.78
Torrington	261.11	57.50	260.83	222.50
Wheatland	253.85	100.00	291.15	235.63
Worland	291.58	125.00	315.00	258.33

*Prepared by Research and Statistics, Department of Administration and Fiscal Control.

Wyoming Comparative Cost of Living Index* (July 9-11, 1986): Statewide Average = 100

City	Rank	All Items	Food	Housing	Transportation	Medical
Jackson	1	109.25	100.33	119.82	104.52	98.24
Kemmerer	2	108.73	100.00	121.24	98.96	103.73
Evanston	3	108.16	94.58	121.07	105.39	100.87
Gillette	4	107.88	101.52	121.51	100.24	106.82
Rock Springs	5	107.42	98.66	120.45	98.23	99.02
Pinedale	6	106.37	101.41	112.53	100.52	105.09
Cheyenne	7	104.32	97.48	112.54	101.18	98.67
Sundance	8	102.10	112.78	99.82	99.80	104.76
Casper	9	101.75	95.69	101.17	108.50	104.58
Douglas	10	100.97	102.78	100.80	98.08	102.11
Cody	11	100.66	109.45	97.00	100.16	95.70
Laramie	12	100.41	99.11	102.85	99.57	95.38
Worland	13	99.18	102.29	94.59	102.22	100.99
Wheatland	14	98.63	99.93	96.34	101.52	100.17
Rawlins	15	98.02	98.07	96.64	101.46	97.38
Buffalo	16	96.68	101.35	91.51	97.55	94.71
Sheridan	17	96.57	97.14	94.44	97.25	102.47
Newcastle	18	96.38	102.93	91.29	95.80	102.14
Thermopolis	19	95.33	103.03	89.70	95.32	96.67
Riverton	20	94.44	94.09	91.60	99.99	99.66
Lusk	21	93.52	94.35	82.57	102.87	97.17
Greybull	22	92.92	104.04	78.93	99.92	96.96
Lander	23	91.04	97.70	81.74	95.79	101.82
Torrington	24	89.26	91.29	79.85	95.16	94.89

*Apparel and Recreation Indices not shown.

Source: Wyoming Department of Administration and Fiscal Control.

Format

For data available at least quarterly, the last 12 quarters are printed in WQU. In this edition, published series begin with the 3rd quarter of 1983, and end with the 2nd quarter of 1986. For other data series (primarily annual), the most recent observations, up to 12, are published in WQU. Most annual data series will reappear in WQU only when updated, or about every fourth issue. Quarters are calendar quarters. For example, the 3rd quarter is composed of July, August, and September. In the table headings and narratives, a particular quarter will be indicated by notation such as 2/82 (2nd quarter, 1982), 1/82 (1st quarter, 1982), and so on.

Beside each data series name is an abbreviation in parentheses. The abbreviation indicates the units (such as dollars, tons, feet, miles, etc.) [illegible] the data. The key to the units abbreviations is below.

Throughout WQU, all data are for the state unless otherwise stated. The most recent year's data should be viewed as preliminary, due to revisions. The acronymn "INA" signifies that information is not available.

The reader should be attentive to the footnotes at the bottom of pages, particularly those accompanying a data table. The footnotes help the reader to properly interpret the data, and they also indicate when more detailed (by subject or by area) data than that which is shown is available from IPR. A list of sources follows the footnotes.

Key to Units Abbreviations

MBF - Thousand Board Feet

TKWH - Thousand Kilowatt Hours

$ - Dollars

M$ - Millions of Dollars

B$ - Billions of Dollars

T$ - Thousands of Dollars

H$ - Hundreds of Dollars

ST - Short Tons

TST - Thousands of Short Tons

MCFD - Million Cubic Feet Per Day

TBPD - Thousands of Barrels Per Day

GL - Gallons

TCF - Thousands of Cubic Feet

KWH - Kilowatt Hours

TGL - Thousands of Gallons

HBBL - Hundreds of Barrels

HMCF - Hundreds of MCF Per Day

HST - Hundreds of Short Tons

$/ST - Dollars Per Short Ton

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CRIS reports now available:

		PRICE
#82-8:	Age Distribution in Wyoming,1980, August 1982, 120 pages. Analysis of age profiles in 5-year brackets. Wyoming: Comparison with USA and with 1970. Indications of net in-migration by age. Prediction of 1990 peak at ages 30-34. Counties: Maps of age distribution. Graphs of age profiles for each county. Cities: Age profile for each city.	No Charge
#5:	STF1, October 1981, 54 pages. 100% count data, 1980 population and housing: state, counties and cities.	No Charge
#6:	Laramie People Patterns, January 1982, 11 pages. Minority distribution in Laramie by zoning and by age of neighborhood.	No Charge
#83-5	May 1983, 29 pages. Labor in Wyoming, 1980, labor force participation; age of labor force occupations.	No Charge
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#84-2	December 1984, 21 pages. Poverty in Wyoming, 1980 Census, numbers and rates of groups of persons in Wyoming with 1979 income under poverty level.	No Charge

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C. Novotny and G. Fred Doll
Institute for Policy Research
University of Wyoming

Phil Kiner
Research and Statistics Division
Department of Administration and
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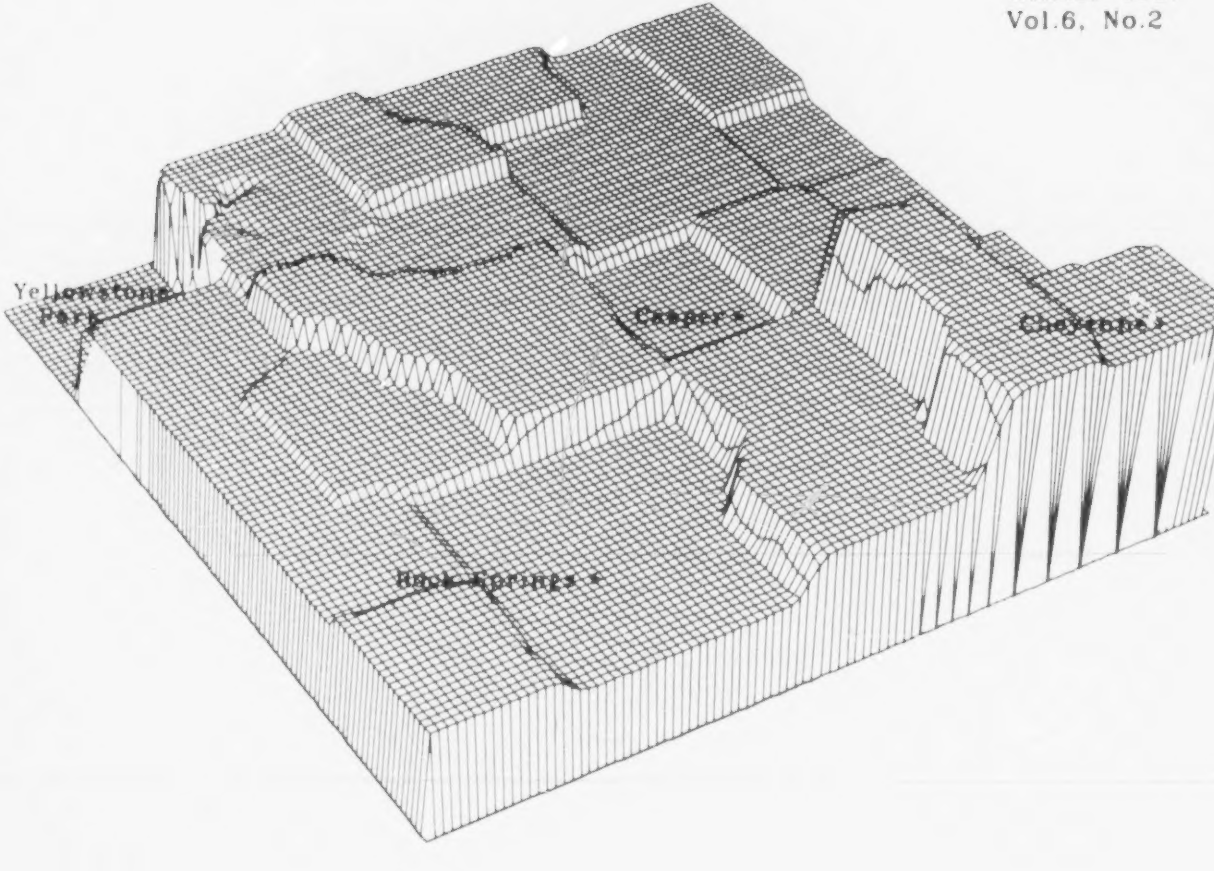
WYOMING QUARTERLY UPDATE

Winter 1987
Vol.6, No.2



IPR

1984 Government Sector Personal Income
(Percentage of County Total Personal Income)

Wyoming Quarterly Update

Wyoming Quarterly Update (WQU) represents the efforts of the Institute for Policy Research (IPR) at the University of Wyoming to provide improved data access services. The data presented in WQU are assembled from secondary sources, such as government agencies and private industry. The staff of IPR greatly appreciates the ongoing, cheerful cooperation of each of the data sources listed in the bibliography.

WQU provides current indicators and timely, easily accessible data. Most of the data published in WQU are updated quarterly with the most current numbers. The complete data sets from which WQU originates are maintained, together with documentation by IPR. Readers are encouraged to contact IPR to find out how to gain access to data which do not appear in the WQU. Many data series, such as gasoline sales and taxation data, span more than 30 years. Numerous other series cover 20 years or more.

Efforts to expand the subject and geographic detail (county data) of data sets will be made continuously. Featured in this edition is a perspective of the government sector in the state.

The cover of each edition features a contour map illustrating the geographic distribution of a particular variable. This edition presents a contour map depicting 1984 government sector personal income, as a percentage of county total personal income.

First-time readers of WQU should refer to the "format" explanations on page 48 for keys on how best to use and interpret data presented in this publication.

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FRONT MATTER

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WYOMING
SCENE

Overview and Perspective

While the national economy finished 1986 with a fourth-quarter flourish on some fronts, the record for the entire year was not particularly strong.

The unemployment rate did drop to 6.7 percent in December, according to the Labor Department, to its lowest level since the 6.3-percent rate posted in March 1980. Nonfarm payroll employment rose by 269,000 in December, after increasing by 239,000 in November. Manufacturing employment, which had been in the doldrums throughout much of the year, showed new signs of life in the fourth quarter. Manufacturing employment rose by 31,000 jobs in December, and the factory workweek advanced to 40.9 hours. The late surge allowed manufacturing to recoup approximately half the jobs lost during the first six months of 1986. In its survey of 60,000 households, the Bureau of Labor Statistics estimated that 110 million Americans held jobs in December--an all-time high.

At the same time, industrial output increased by 0.5 percent in December, following gains of 0.6 percent in November and 0.3 percent in October. Industrial output rose at a 3.2 percent annualized rate during the fourth quarter, the best performance since the third quarter of 1984. The bulk of the increase was reflected in the output of durable home goods, such as appliances and televisions, which may have been related to the housing boom during the first half of the year. Auto sales, which jumped to an annualized rate of 9.6 million units in December, were another factor. By early January, however, auto sales were dropping sharply. The surge in fourth-quarter sales apparently resulted as consumers rushed to avoid losing state sales tax deductions as a result of changes in the federal tax laws. Tied to the surge in auto sales was a 4.4 percent increase in December's retail sales. Consumer spending continued to be a key prop in the national economy, and one of the main impediments to another national recession.

Defense sector industrial output also increased, and backlogs of defense orders remained high (totaling $149.8 billion at the beginning of December). Thus, defense sector output is expected to remain strong, at least through the first half of 1987.

The stock market was so good it frightened some analysts. By the end of January, the Dow Jones average topped the 2,150 mark, a record high. Money poured into the market from large financial institutions, foreign investors, and ordinary citizens. Big blocks of money freed by mergers and acquisitions, cashed-in tax shelters, and pension fund investments helped encourage the play.

Not all the year-end numbers were bullish, however. The real Gross National Product (GNP)--the inflation-adjusted value of the nation's output of goods and services--grew by an annualized rate of only 1.7 percent during the fourth quarter. Flagging performance in the final quarter meant that real GNP grew by only 2.5 percent during 1986, according to Commerce Department figures. The Reagan Administration had hoped for 3.4 percent real growth at the beginning of 1986, but those expectations were revised soon enough. In August, the administration cut its estimate to 2.9 percent, but even that level of growth could not be attained. In 1985, real GNP grew by 2.7 percent. Among other things, the lack of growth was blamed on the burgeoning trade deficit, uncertainty about federal tax changes, and damage to energy-sector investments that resulted from falling oil prices.

There was some hope that the trade deficit would begin narrowing--before it hit a record $19.22 billion in November. Nevertheless, there are some signs that bode well. Economists hope that as the dollar falls against foreign currencies, some of the imbalance can be corrected. In January, the dollar fell to a post-World War II low against the Japanese yen (149.98 yen per dollar). In addition, both President Reagan and leaders of the democratically controlled Congress have targeted the trade deficit as a priority national problem. Just what can or will be done about the trade deficit, however, remains to be seen.

The outlook for other economic activity is also uncertain. Consumer prices rose a scant 1.1 percent during 1986, according to the Labor Department. However, prices could rise again in the coming months as oil prices move upward. Energy prices fell 19.7 percent during 1986, due mainly to a drop in oil prices. Excluding energy prices, the cost of goods actually increased by 3.8 percent during 1986. Some economists expect U.S. inflation to rise to an annual rate of about 4 percent in 1987 as energy prices climb.

The outlook for housing is mixed. During 1986, housing starts rose 3.7 percent to 1,806,600 units, the most since 1978. The year 1987 could be a good one for single-family dwellings. On the down side, however, there could be weakness in multifamily dwellings, due to high vacancy rates, overbuilding, and the elimination of tax shelter advantages.

Personal income rose 0.8 percent in December. For all of 1986, income rose 5.2 percent, after increasing by 6.6 percent in 1985. However, income gains near the end of the year looked less good when various idiosyncrasies are taken into account. These included large increases in subsidy payments to farmers in December and bonus payments to auto-industry employees in October. Excluding such factors, for example, income rose by only 0.2 percent in December.

While the employment picture during 1986 was generally good, in selected areas--such as employment in mining, including oil and gas extraction--the picture was anything but good. In December, such employment fell by another 5,000 after falling by 3,000 in November. Corporate profits for the major oil companies were no more rosy. During the fourth quarter, major losses were posted by Exxon (-18 percent), Atlantic Richfield (-55 percent), and Amoco (-58 percent).

Regional oil and gas drilling reflected drops felt throughout the nation during 1986, according to Petroleum Information (PI) of Denver. In PI's Rocky Mountain region, which encompasses all or part of 10 states including Wyoming, a total of 2,711 well completions were reported on a preliminary basis during 1986, down from 4,599 just one year earlier. Success rate for exploratory wells was also down, from 13.2 percent in 1985 to 12.2 percent in 1986.

Wyoming's state government is currently wrestling with difficult budget decisions occasioned by the precipitous drop in oil prices during 1986. Yet Wyoming is not the only state experiencing budget difficulties. According to a survey conducted recently by the National Association of State Budget Officers, 21 states had announced plans to cut budgets during the 1987 fiscal year. Leading the way were the nation's oil-producing states, including Oklahoma (where a 16 percent cut was made before the budget was enacted), Alaska (with anticipated cuts of 13 percent), Texas (13 percent), and Wyoming (10 percent).

One bright spot that has emerged with respect to oil prices has been an agreement by most OPEC members to curtail oil production. By mid-January, the price of oil on the world market had risen beyond the $18-per-barrel level. If the price holds, Wyoming may find itself in somewhat better financial shape than was anticipated last December.

Conditions in the state's agricultural sector have been largely overshadowed by news of oil prices and revenue shortfalls in recent months. In January, the Wyoming Agricultural Statistics Service reported that the state's agricultural industry realized a net cash income of a negative $21.6 million in 1985. It was the fifth consecutive year that the industry's net income was a negative value. In addition, the service reported that when the value of 1985 inventories was included in net income, the total swelled to a negative $59.9 million.

S.T. Mast, IPR

# #

Winter Minerals Outlook

OVERVIEW

OPEC's tentative accord at the end of 1986 provides some optimism for 1987. For however long higher prices last, they will not only be welcomed by Wyoming's oil and gas industry, but also by the state's governmental bodies and educational institutes alike because they will help offset the low prices that dominated 1986, and they will help offset declining revenue as annual production from Wyoming's oil fields declines. But $18 per barrel oil won't stimulate much increase, if any, in oil and gas exploration activity. This means annual oil production will continue its projected decline for the foreseeable future, very possibly at accelerating rates.

Although production estimates for Wyoming's other major revenue-generating minerals (natural gas and coal) are still projected to decrease in 1986, both should show increases in 1987, although estimates for natural gas increases have been scaled down since last year's estimates (see table 1).

In regard to other minerals produced in Wyoming, modest increases in production are at least still projected for trona, construction materials, and possibly even uranium, although the possible increases in uranium production would still leave this industry only a wisp of its past size. In addition, there is a possibility that mining of zeolites, naturally-occurring sulfur, cement materials, and even gold could be in the offing in the future, although only cement manufacture is almost certain to occur.

Because there were really no significant changes in production estimates for any of the major minerals produced in Wyoming, except natural gas, since our estimates of September 1986, it may be difficult to fathom the big downward revision of State General Fund revenues projected in December 1986 for the 1987-1988 biennium. This revised estimate was afterall only slightly more than two months after the one released in October 1986. As a member of the group that made the projections, let me share the group's explanations for our major downward revisions for the current biennium (1987-1988).

The changes primarily stemmed from the availability of additional detailed information not available in late September. Specifically, third quarter severance tax information indicated that the average taxable values for oil, natural gas, and coal (the three major sources of mineral revenue) were all substantially below previously predicted and published levels. In addition, for the first time, the federal government provided monthly information on mineral production from federal lands and corresponding royalty receipts. In the case of oil, prices indicated by these two sources of information could now be compared with posted field prices for oil.

Compounding the shortfalls in severance

Table 1: Wyoming Mineral Production Forecast to 1991[1].

Calendar Year	Oil Production[2]	Natural Gas Production[3,5]	Carbon Dioxide Production[3]	Coal Production[4]	Trona Production[4]	Uranium Production[4]
*1981	122.1	455.4	--	102.8	11.8	4.6
*1982	118.7	465.1	--	107.9	10.1	2.1
*1983	120.9	539.7	--	112.2	10.5	3.0
*1984	127.8	600.1	--	130,7	11.0	1.6
*1985	131.0	597.9	--	140.4	10.8	0.6
1986	123.0	558.0	25.0	135.0	11.5	0.3
1987	115.5	605.0	75.0	149.0	11.7	0.3
1988	107.5	629.0	100.0	143.0	12.1	0.4
1989	100.0	664.0	100.0	146.0	12.1	0.5
1990	93.0	699.0	100.0	150.0	12.2	0.5
1991	86.5	730.0	100.0	151.0	12.5	0.6

*Actual values for comparison:

[1] Geological Survey of Wyoming, January, 1987

[2] in millions of barrels

[3] in billions of cubic feet

[4] in millions of tons

[5] Production estimates for natural gas are the only ones changed since September 1986.

taxes related to declining mineral values, sales and use taxes and pooled interest revenue were also lagging behind the October forecasts. Let us look at each of these things more closely, starting with oil. In December, production levels were not changed from the October projections; however, the average taxable value of a barrel of Wyoming crude had shown no evidence of rebounding closer to posted field prices. Prior to 1985, the average taxable value of Wyoming oil had generally been $1.00 or more above the average price paid for domestic oil. In 1985, the average taxable value fell to nearly $1.00 below the national average. Based on all the new information available in December, the average taxable value for Wyoming oil was staying at about 75 percent of the posted field prices. While posted prices were between $13.50 and $14.50, Wyoming's average taxable value was only $10.50 per barrel. Should OPEC's tentative accord in late December actually stabilize oil prices at $18-$20 in 1987, projected General Fund revenues from oil for the 1987-1988 biennium could be $4 million to $8 million higher than forecast in early December. Continued stabilization at these higher oil prices could result in a $7 million to $18 million increase in the projections of severance taxes from oil in the 1989-1990 biennium.

In regard to natural gas, both production and price changes were needed between the October and December forecasts. Although the October forecast predicted that production would decline, third quarter severance tax information indicated that production was going to be less than the earlier projection. It was also noted that taxable production for 1986, like 1985, was going to be about 68 percent to 69 percent of the gross production, rather than the 74 percent typical of 1984 and earlier years. Third quarter severance tax collections also indicated that the average taxable value for natural gas had fallen below any amount previously projected, i.e., under $1.90 per thousand cubic feet (MCF). It was obvious that the gas glut had not yet ended and that lack of demand and low oil prices were holding down natural gas production and prices. Consequently, projected production increases had to be moved out about a year from the October projections, and natural gas prices were not forecast to increase until 1988. Persistent higher oil prices (OPEC's $18-$20 range) could improve the average projected prices for Wyoming's natural gas. If this should happen, severance tax revenues to the General Fund would increase over the December forecast. But this is not a certainty.

Turning to coal, the production levels forecast in October remained unchanged in December, but third quarter severance tax payments indicated the assessed taxable value had declined to $8.55 per ton instead of the $8.65 previously projected. Due to extremely low spot prices paid for Powder River Basin coals, many contracts continue to be renegotiated downward and some contracts have even been bought out early so a utility could benefit from the current low prices. Based on the lowered taxable value for coal in 1986, the estimated average taxable value for a ton of coal were also lowered for 1987 and 1988 in December.

Revenue derived from pooled interest is directly related to the level of the General Fund and Budget Reserve Account cash balances. The General Fund's share of pooled interest has decreased substantially in the last few years with the creation of more earmarked revenue accounts, such as the Water Development Account. For example, the transfer of $114.6 million from the General Fund to the Water Development Account over the past couple of years is one of the major reasons that the General Fund's share of pooled interest has plunged so sharply and rapidly. Now the General Fund's share of the pooled interest comes almost solely from interest received from the Budget Reserve Account investments. Any decrease in the Budget Reserve Account, which is quite possible with lagging revenues, decreases revenue to the General Fund from this source. Because actual cash balances between October and December were lower than projected, revenues from pooled interest had to be revised downward. Tracking expenditures from a myriad of earmarked accounts all administered by different entities has greatly complicated prediction of this revenue source.

The latest sales tax collections indicated revenue from this source was dropping faster than expected in October. This is consistent with past years, which have shown that sales tax receipts track severance tax collections, particularly on the down side. The outlook for fiscal year 1988 is no better due to the current economic conditions and will probably be compounded by reduced government spending at both the state and local levels.

While more reductions in use tax collections are indicated due to the depressed economy, shortfalls in collections will be tempered by increased revenue stemming from audit collections.

The bottom line at the December revenue forecasting meeting was that the taxable unit value for each of Wyoming's three major produced minerals (oil, gas and coal) was far below the levels predicted and incorporated in the October forecast. It had not been possible to substantiate that in late September because significant information on tax collections simply had not been available. Once it was apparent that severance tax collections were not tracking the October forecast, it was not surprising that the other revenue sources, particularly sales tax, would also be below earlier expectations. Hopefully, with the advent of new more timely production and pricing information, such radical revisions will be less commonly needed. It should be remembered, however, that the price of oil is not controlled by Wyoming or the United States for that matter. Until oil prices stabilize, all mineral revenue forecasts will be subject to significant and often abrupt changes.

Unfortunately, oil prices in the range of $18-$20 will do little to affect the revenue derived from sales and use taxes, as these prices are not high enough to really stimulate exploration activity in Wyoming. Renewed exploration and development for both oil and natural gas are paramount to stimulating Wyoming's economy at least in the near term.

Gary B. Glass, State Geologist
Geological Survey of Wyoming

OIL AND GAS UPDATE

In mid-December, the posted price for Wyoming Sweet was raised a dollar to $14.75 per barrel; however, an analysis of the top 25 oil fields in the state shows that Wyoming is actually getting an average of $2 less per barrel than the posted price in these top 25 oil fields due in part to reductions for low gravity. These top 25 fields accounted for nearly 56 percent of Wyoming's 1985 production. Spot prices for Wyoming gas have also decreased and are currently around $1.35 per MCF. This drop has been caused by the excess supply of gas in this country, as well as price competition from cheap oil. In addition to the drop in revenues from the low prices for oil and gas, production of Wyoming oil and gas is projected to decline by about 6 percent in 1986.

The only real prospects for reviving the industry, at least in the next year or two, appear to be a significant production cut by OPEC or enactment of an import fee. Support for an import fee is gaining momentum, but even its advocates give the fee less than a 40 percent chance of being implemented in the near future. Thus, the domestic oil industry is at the mercy of a handful of squabbling oil ministers; the most influential of these represent Middle Eastern countries. A 7 percent production cut was agreed upon by OPEC in late December; however, most of the OPEC members have a history of cheating on their quotas. There is also a big surplus of crude on the market as a result of overproduction in 1986. Much of this surplus will have to be used before prices will rise dramatically and stabilize.

On December 2 a meeting organized by Governor-elect Mike Sullivan was held in Casper to advance the prospects for a fee on all imported oil. Spokesmen favoring the fee included the Governor-elect, a Harvard economics professor, a chief executive officer of an oil company, and a member of the Texas Railroad Commission. Enactment would have the effect of increasing the price of Wyoming oil by the amount of the fee.

In a related item, the average weekly rig count for 1986 was about 36. Drilling picked up somewhat in December and the rig count averaged over 40 for that month.

Well completion statistics for the first eleven months of 1986 are summarized and compared with figures for 1985, 1984, 1983, 1982 and 1981 in the table below:

	New Field Wildcats				All Wells			
	Oil	Gas	Dry	Total	Oil	Gas	Dry	Total
1986*	24	2	214	240	282	31	336	649
1985	64	8	469	541	920	109	809	1,738
1984	57	9	440	506	801	142	750	1,693
1983	23	13	305	341	698	152	550	1,400
1982	68	28	404	500	1,029	272	827	2,128
1981	76	43	471	590	756	222	746	1,724

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*11 months. From: Petroleum Information Corporation, Rocky Mountain Region Report, December 17, 1986, p. 7.

Extrapolating the figures for the first eleven months to the end of 1986 leaves Wyoming with approximately 280 fewer wildcat wells and 1,000 fewer total wells than were drilled in 1985. It also indicates approximately 50 fewer oil discoveries and 40 fewer gas discoveries than were made in the boom year of 1981. The figures also show an extreme drop in the drilling of development wells in 1986. If this disturbing trend continues much longer, Wyoming oil production will decline even more sharply.

Revenues from lease sales are also down, reflecting the decline of the oil and gas industry and, in some cases, the lack of high quality lease offerings. The U.S. Bureau of Land Management (BLM) held two sales in the last quarter of 1986. The October sale drew high bids of $840,950 for 16,604 acres. There were bids on 68 of the 76 parcels offered with an average bid of $50.65 per acre. The high per-acre bid of $516.86 was made by Wessely Energy for a 320-acre tract in section 35, T.48N., R.70W. in Campbell County. The tract is less than one-half mile from Pierce Field and one mile from Bishop Ranch South Field, both of which produce oil from the Minnelusa. Bids for the two top tracts in this sale accounted for 25.8 percent of all revenue generated.

The BLM's December sale drew high bids of $774,824 for 19,840 acres. Bids on 92 of the 110 parcels averaged $39.05 per acre. Southwestern Energy Production made the sale's high per-acre bid of $3,313.13 for a 40-acre tract in section 14, T.49N., R.70W. in Campbell County. The tract is in Winter Draw Field, which produces oil from the Minnelusa. Bids for the two top tracts generated 33.6 percent of the total revenue for this sale.

The Wyoming Board of Land Commissioners' November lease sale drew high bids totaling $99,403 for 24,728 acres. Only 74 of the 200 tracts and less than one-third of the offered acreage received bids. Wilbanks and Associates of Denver made the high per-acre bid of $120 for a 40-acre lease in section 21, T.42N., R.73W. in Campbell County. The tract is about a mile northeast of Dakota production at

Turnercrest Field. Of the 74 tracts which received bids in this sale, 42 drew the minimum bid of $1 per acre and only eight of the tracts drew bids of more than $10 per acre. Total revenues from Bureau of Land Management sales and state sales in 1986 were both less than 25 percent of the total revenues from 1984 sales.

The carbon dioxide (CO_2) injection project at Rangely Field in Colorado began on October 12. Exxon's Shute Creek plant near La Barge, Wyoming, is supplying the CO_2. Chevron, the operator for Rangely, has agreed to buy 900 billion cubic feet of CO_2 over the next 12 years, which is an average of 205 million cubic feet per day. The initial injection rate, however, is only 75 million cubic feet per day. A spokesman for Chevron said an oil price of about $20 per barrel is needed to justify the injection of 200 million cubic feet daily.

Colorado Interstate Gas Corporation recently announced that it is studying the possibility of closing its Patrick Draw sour gas plant at Table Rock. A spokesman for the company said a short-term shutdown would probably occur. The plant employs 120 people.

On a more optimistic note, the Luckey Ditch Field in Uinta County continues to expand. Sun Exploration and Production completed the Four Luckey Ditch Federal-B well December 15 in section 19, T.12N., R.114W., flowing 1,085 barrels of 42° oil, 1,076 MCF of gas, and 99 barrels of water per day from the Dakota. The well was tested on a 15/64-inch choke through perforations between 15,714 feet and 15,748 feet. The most recent production figures for September show the discovery well, the One Luckey Ditch State, completed in May of 1985 in section 16, T.12N., R.114W., produced 1,083 barrels of oil and 3,127 MCF of gas per day. The Two Luckey Ditch Federal, completed in April of 1986 in section 22, T.12N., R.114W., produced 988 barrels of oil and 2,675 MCF of gas per day. The Three Luckey Ditch Federal, completed in April of 1986 in section 20, T.12N., R.114W., produced 792 barrels of oil and 1,603 MCF of gas. A fifth well, completed by Anadarko Petroleum Corporation in February of 1986 in section 4, T.12N., R.114W., produced 419 barrels of oil and 4,095 MCF of gas per day. Sun is currently drilling the Five Luckey Ditch Federal-C in section 9, T.12N., R.114W., and has staked three additional locations in sections 10, 15, and 21 of T.12N., R.114W.

Thermal Exploration recently completed a Dakota discovery on the Moxa Arch in section 10, T.24N., R.111W. The well flowed 6,986 MCF of gas and 323 barrels of condensate per day. This discovery was a deeper pool discovery in Lincoln Road Field, which also produces from the Frontier. Thermal Exploration will drill another Dakota test in section 9, T.24N., R.111W., and Texaco has also scheduled a Dakota test in section 3, T.24N., R.111W.

Quarles Drilling of Tulsa will drill a 25,000-foot well for BHP Petroleum in section 3, T.38N., R.90W. The well is scheduled to bottom in Precambrian. This well will be about 2½ miles west of the Rocky Mountain region's deepest producing well, Monsanto Oil's 1-5 Bighorn drilled in section 5, T.38N., R.90W. The 1-5 Bighorn reached 24,877 feet, took 641 days to drill, and was completed producing gas from the Madison and Bighorn between 23,758 feet and 23,902 feet.

The Permian and Pennsylvanian play of western Nebraska has spread into eastern Wyoming. True Oil recently completed a Pennsylvanian wildcat well in section 25, T.22N., R.62W. as a 10,050-foot dry hole. Conoco is nearing its objective of 11,700 feet in the Pennsylvanian in a wildcat it is drilling in section 3, T.19N., R.65W. Both of these wells are in Goshen County.

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COAL UPDATE

Wyoming coal production for 1986 continued to lag behind 1985's record pace. Coal deliveries for three quarters of 1986 were over 5 million tons less than they were in 1985, even though deliveries made in the third quarter (July, August, and September) of 1986 were only about 0.6 million tons less than deliveries made in the third quarter of 1985. This is slightly encouraging because second quarter deliveries in 1986 were 4.3 million tons less than deliveries in the second quarter of 1985. Also, deliveries in September 1986 marked only the second time all year that a single month's coal deliveries exceeded coal deliveries for the same month in 1985.

Additional data on Wyoming's 1985 coal production have recently become available. Production from federal coal leases increased dramatically from 1984 to 1985, with an increase of over 31 million tons, or about 45 percent. The increase in federal coal production in 1985 was offset by a 2.6-million-ton, or 14 percent, decrease in production from state coal leases and an 18.5-million-ton, or 44 percent, decrease in production of private coal. About 71 percent of the state's total coal production came from federal coal leases, about 17 percent from private leases, and about 12 percent from state coal leases. Coal on state leases was valued at about $152 million, had an average value of $9.18/ton (excluding retroactive adjustments), and accounted for over $14 million in royalties to the State of Wyoming. Coal from federal leases in Wyoming was valued at over $1.2 billion and had an average value of $12.36/ton. Nearly $28 million in royalties were collected from federal coal leases in Wyoming in 1985; the State of Wyoming receives 50 percent of these royalties. Wyoming accounted for about 60 percent of the 166.4 million tons of coal produced from federal coal leases in 1985 (U.S. Department of the Interior, Minerals Management Service, 1986).

National coal production figures for 1985 also became available recently (Energy Information Administration, 1986a and 1986b). The total United States coal production in 1985 was 883.6 million tons, a decrease of 1.4 percent over 1984's record-setting 895.9 million tons. The United States dropped to second place among the world's coal-producing countries in 1985. China became the world's leading coal producer in 1985 with 937 million short tons of coal, and the U.S.S.R. ranked third in production with 798 million short tons of coal. The top three coal-producing countries accounted for about 55 percent of the world's 4.8 billion short tons of coal produced in 1985.

Wyoming not only accounted for 16 percent of the nation's total coal production in 1985 (an increase from its 14.7-percent share of national production in 1984), but it also accounted for about 50 percent of the 268.6 million short tons of coal produced in the western U.S. Campbell County continued as the nation's leading coal-producing county: more coal was produced from this county than was produced from each of 25 of the 27 coal-producing states. The state also produced about 26 percent of the nation's 529.7 million short tons of surface-mined coal, about 52 percent of the nation's subbituminous coal and lignite, and about 71 percent of the nation's 192.6 million short tons of subbituminous coal.

Thunder Basin Coal Company's Black Thunder Mine was the leading coal-producing mine in the U.S. for the fourth consecutive year. This mine's production exceeded the coal production from each of 17 coal-producing states. According to information compiled for the Keystone Coal Industry Manual and published in Coal Age magazine (McGraw-Hill, Inc., 1986), six of the top ten coal-producing mines in the nation in 1985 were Wyoming mines: Kerr-McGee's Jacobs Ranch Mine was ranked second; Amax Coal Company's Belle Ayr and Eagle Butte Mines were ranked third and eighth, respectively; Carter Mining Company's Rawhide Mine was sixth, and Cordero Mining Company's Cordero Mine was ranked tenth. Two Montana coal mines also were ranked in the top ten: Western Energy's Rosebud Mine was fifth and Decker Coal Company's Decker East and West Mine was ninth. Two Texas lignite mines ranked fourth and seventh, respectively. Ten of the top 20 and 14 of the top 30 coal mines in the U.S. are Wyoming mines.

On a different note, three new coal transportation contracts were signed recently by the Chicago and North Western Transportation Company (C&NW)/Union Pacific Railroad Company (UP) joint venture. In late October, the joint venture signed two contracts with Iowa Public Service Company (IPS). One contract is for haulage of 2.3 million tons of coal from Carter Mining Company's Caballo Mine to the utility's George Neal Unit No. 4 Generating Station near Sergeant Bluff, Iowa. The other contract is for haulage from both the southern Powder River Basin and the Hanna Basin to the utility's George Neal Units No. 1, 2, and 3, also near Sergeant Bluff, Iowa. IPS currently supplies the Neal Units 1, 2, and 3 with coal from Arch Mineral Corporation's Seminoe No. 2 Mine near Hanna, but IPS may be using Powder River Basin coal in the near future. Although the contract for coal transportation to the Neal Unit No. 4 is effective January 1, 1987, deliveries will not start until May 1987, when repairs from last summer's tornado damage to the unit are completed. The Caballo Mine that will supply this contract is located on the rail line that the joint venture railroad and Burlington Northern (BN) now share. The joint venture had planned their own 10-mine extension line north of Coal Creek Junction to serve Caballo and two other mines, but the project was canceled after C&NW/UP and BN agreed to share the existing line.

The third transportation contract signed by the C&NW/UP joint venture is for hauling 0.4 million tons of coal annually from Rochelle Mining Company's Rochelle Mine in southern Campbell County to Consolidated Paper, Incorporated, in Wisconsin Rapids, Wisconsin. The coal will be used by Consolidated's three Wisconsin paper plants. C&NW has now signed at least 15 contracts to haul coal from Wyoming coal mines, including several short-term contracts lasting from six months to one year.

In other coal transportation news, Gulf States Utilities recently announced that new rail rates had been obtained from the Burlington Northern and Kansas City Southern railroads on coal haulage contracts from Kerr-McGee's Jacobs Ranch Mine in the eastern Powder River Basin to the utility company's Nelson generating plant near Lake Charles, Louisiana. The rate decrease on the new contract is expected to save the utility about $3 million a year and will help keep the coal-fired plant competitive with natural gas. The utility purchases about 2.25 million tons of coal per year from Kerr-McGee's mine.

In news related to coal transportation, six railroad companies that haul western coal (including BN, UP, and C&NW as well as the Kansas City Southern Railway Company, Missouri Pacific Railroad Company, and the Atchison, Topeka and Santa Fe Railway Company) have been sued for damages by a Texas utility company and by Energy Transportation Systems, Inc. (ETSI) in two separate legal actions (PenWell Publishing Company, 1986). Houston Lighting and Power Company (HL&P) is seeking damages on the grounds that the six railroads conspired to block construction of a 1,400-mile-long coal slurry pipeline from Wyoming's Powder River Basin to the Texas and Louisiana area. In the suit, HL&P charges that if construction of the slurry line had taken place, billions of dollars in fuel costs could have been saved by the utility because transportation rates on the coal would have been lower via a slurry line than on a railroad track. ETSI's suit against the railroads alleges conspiracy and violation of antitrust laws and seeks damages of $940 million. ETSI contends that its coal slurry pipeline project had to be canceled in 1984 because railroad opposition to the project created costly delays to ETSI in securing rights-of-way, permits, and other clearances necessary for the project to proceed.

In the last Wyoming Quarterly Update (v. 6, no. 1, p. 9), it was reported that Arch Mineral Corporation had suspended operations at its Seminoe No. 2 Mine. In November 1986, coal production at this mine resumed after the company reached an agreement with the independent employee's association. The settlement between Arch and the employee's association allowed the 89 miners to go back to work, but at a 37-percent reduction in wages and a total reduction of 51 percent in wages and benefits. During the period of suspended production, supervisory personnel continued operations at the mine to fulfill coal contract obligations.

Also in the Hanna Basin, it appears that the long legal battle between Northern Indiana Public Service Company (NIPSCO) and Carbon

County Coal Company (CCCC) is finally over. In early September, NIPSCO agreed to pay CCCC $181 million in damages for canceling a coal contract after the U.S. Seventh Circuit Court of Appeals upheld an earlier court decision. CCCC had appealed the earlier court decision, asking for specific performance of its contract with NIPSCO instead of a cash settlement. Because NIPSCO was CCCC's only coal customer and the coal company has been unable to secure any new customers, Wyoming's only major underground coal mine appears to be very near permanent closure.

Coal contract activity in Wyoming during the last quarter of 1986 slowed down. Only two short-term contracts, one 10-year contract and a single replacement contract, were signed with Wyoming coal producers during this quarter. Mobil Coal Producing, Incorporated, won a 100,000-ton spot contract to supply coal to one of Oklahoma Gas and Electric's power plants in Oklahoma during the last quarter of 1986.

Amax Coal Company won a one-year, 1-million-ton contract to supply Wisconsin Power and Light Company's Columbia No. 2 generating unit. Coal for this contract will be mined at Amax's Belle Ayr Mine south of Gillette and will be transported to Portage, Wisconsin, via C&NW and the Soo Line.

Under a 10-year contract signed at year's end, Rochelle Coal Company will begin shipping coal to Louisiana Gasification Technology, Inc., a wholly-owned subsidiary of Dow Chemical U.S.A. in 1987. This is a first for Wyoming since the coal will be used in a commercial coal gasification plant at Plaquemine, Louisiana. The coal, which will come from the Rochelle Mine, will be converted into a medium-Btu synthetic gas. The gas will fuel combined cycle gas turbines for cogenerated steam and electricity. Initially, the contract calls for 310,000 tons of coal per year. Tonnage requirements will gradually increase to 715,000 tons per year from 1991 through 1996.

The replacement contract is between Nerco Coal Company and the Platte River Power Authority (PRPA) and is the result of negotiation between the two in an effort to reduce the price of coal delivered to the utility's Rawhide plant near Fort Collins, Colorado. The old contract was canceled when PRPA paid Nerco $29 million; the new contract calls for delivery of a total of 25 million tons of coal over a period of 30 years. The contract was expected to go into effect in January 1987 and will be supplied by Nerco's Antelope Mine in northern Converse County.

Federal coal leasing in Wyoming was back in the news in the last quarter of 1986. At a meeting of the Powder River Regional Coal Team (RCT) in early December 1986, the RCT discussed the future of renewed federal leasing in the basin and decided to recommend to the Secretary of the Interior that no additional coal leasing be considered until October 1987. It was decided that if enough interest had been expressed in additional leasing at that time, the RCT would decide on whether or not to proceed with plans for another coal lease sale. Although leasing in the Powder River Basin appeared to be temporarily on hold in 1986, there was a competitive lease sale for a 1,218-acre tract in the Rock Springs area of southern Wyoming in December 1986. Like the Powder River Basin, the Green River - Hams Fork coal production region had very little coal-leasing activity during 1986.

It was reported in an earlier issue of the *Wyoming Quarterly Update* (v. 4, no. 4, p. 10) that a federal judge had ruled that all the coal leases in Montana issued as a result of the 1982 Powder River Basin coal lease sale were void and the leases were to be canceled. A recent decision by U.S. District Court Judge Battin has modified this ruling. Instead of canceling the leases (pending completion of a supplemental environmental impact statement), they are now just suspended. This ruling will enable Western Energy Company to resume mining on three of the leases it had received in the lease sale. The leases could be reinstated if the supplemental environmental impact statement assessing the effects of coal leasing on the Northern Cheyenne Indians is completed and approved. The Northern Cheyenne have appealed Judge Battin's recent decision.

One aspect of federal leasing is going in reverse: the amount of leased federal coal in Wyoming seems to be decreasing while the amount of unleased federal coal in the state seems to be increasing. This situation has been brought about by Section 3 provisions of the Federal Coal Leasing Amendments Act. This section, commonly known as the "diligent development" requirements of federal coal leasing, provides that if a federal coal leaseholder (holding a lease issued since 1976) fails to produce commercial quantities of coal from the lease within 10 years of the date of lease issuance, the leaseholder would be denied any future federal mineral leases. Even with the production deadline extended to December 31, 1986, some leaseholders have been forced to relinquish their federal coal leases. In Wyoming, this has resulted in relinquishment of 18 federal leases containing 975 million tons of federal coal. Twelve of the leases (containing about 675 million tons of coal) were Powder River Basin leases, and six of the leases (containing an estimated 300 million tons of coal) were in Carbon County and southwestern Wyoming. Texaco, Incorporated, relinquished the largest amount of coal from five leases in the Lake De Smet area of the western Powder River Basin. These five leases contained about 584 million tons of coal and were part of Texaco's planned synfuels project. Additional coal-lease relinquishments in Wyoming are expected in the future, although leaseholders do have several other options besides relinquishment.

It was reported in the last issue of the *Wyoming Quarterly Update* (v. 6, no. 1, p. 9) that Carbon Field Corporation was searching for funding to build an experimental plant that would convert coal to a patented liquid called "charfuel". By the end of the last quarter of 1986, the company had secured funding from two sources: a grant from the State of Wyoming's Economic Development and Stabilization (EDS) Board, and a grant and loan from the State's Energy Conservation Program. In mid-November, the EDS Board provided a grant of $18,000 to Albany County to assist Carbon Fuels Corporation in a study of its proposal. At the end of December, the company received a $2 million grant and a $2 million loan from the State of

Wyoming. The $4 million came from the $12.5-million Exxon Restitution Fund, a payment made to the State of Wyoming as part of a federal court ruling against Exxon which directed the company to repay customers for overcharges on crude oil sales during a period of federal price controls on U.S. oil. Carbon Fuels Corporation has negotiated an agreement with Pacific Power and Light Company (PP&L) to build a $25-million charfuels processing plant near PP&L's Dave Johnston power plant east of Glenrock and to convert a 100-megawatt boiler at the power plant from coal to charfuel. The demonstration project would convert 500 tons of coal (7,500 Btu/pound) per day (from Glenrock Coal Company's nearby Dave Johnston Mine) to liquid charfuel having a reported heating value of 13,100 Btu/pound. Evidently, the demonstration plant will also test coals from the Hanna area, as well as other Powder River Basin coals. Other funds to finance the $25-million demonstration project are still being sought by Carbon Fuels Corporation.

Also in mid-November, the EDS Board awarded a $25,000 grant to Coal Brik Factory 1, Ltd., through a Community Development Block Grant sponsored by the city of Rawlins. The company, which is a wholly-owned subsidiary of Centennial Coal Company of Fort Collins, Colorado, will use the grant to conduct feasibility studies for a plant to manufacture coal bricks for home heating. The plant would utilize a relatively high-Btu, low-sulfur coal, recycled paper, and petroleum distillant--all compressed together to form a solid brick that could be burned in the home in place of wood. The company is looking at a plant site near Rawlins because of the availability of coal in the nearby Hanna Basin and the availability of petroleum products at the Sinclair Refinery east of Rawlins. Another $1,000 has been given to the company by the Carbon County Economic Development Corporation for a marketing analysis which will be done by the University of Wyoming's Institute of Business and Management Services.

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URANIUM AND INDUSTRIAL MINERALS UPDATE

Uranium

The uranium mining industry in Wyoming is showing signs of a slight recovery. In addition to the two proposed in situ uranium recovery operations reported in the last issue of the Wyoming Quarterly Update (v. 6, no. 1, p. 11), Everest Minerals of Houston, Texas, announced plans for an in situ recovery operation at the site of the former Exxon Highland Mine in Converse County. The project, proposed to begin in late 1987, will employ about 40 people. The project has a 15-year design life and will have an annual operating cost estimated at $10 million. The operation is projected to produce 500,000 pounds of uranium oxide (yellowcake) per year at the beginning, but may expand to 1 million pounds per year, depending upon contracts. Everest has a delivery contract for yellowcake beginning in 1988. Company spokesman John Wold was quoted as saying long-term contract prices for uranium oxide range between $19.00 and $22.00 per pound. This compares with the current spot market rate for uranium oxide published by NUEXCO of $17.00 per pound. (By contrast, the early 1979 spot market rate was $42.00 per pound). Although Everest received a development permit from Converse County in early December, its permit from the Wyoming Department of Environmental Quality was reportedly rejected.

There have been no new developments regarding the other two proposed solution mining projects, Malapai Resources near Pumpkin Buttes and ACIP in the Poison Basin (Baggs) area.

Pathfinder Mines, 80 percent of which is owned by the French Company COGEMA, has expanded its reserves by purchasing uranium claims in the Shirley Basin District from Texaco, Inc. The claims formerly belonged to Getty-Petrotomics, which operated a mine and mill in the Shirley Basin prior to its purchase by Texaco. Pathfinder-COGEMA currently operates a mill and mine complex in the Shirley Basin, the only active uranium mill in the state at the present time.

Pathfinder is also interested in purchasing additional uranium claims in the Gas Hills district. These claims are currently held by the Tennessee Valley Authority, but Pathfinder reportedly is hesitant to make the purchase because of an unresolved battle over state reclamation requirements. At issue is whether mining companies can delay reclamation because of economic conditions, and whether a company purchasing new mining property can be required to immediately reclaim preexisting mine pits, particularly when ore still remains in the pits.

On the national level, a bill that would restrict imports of foreign uranium and provide federal funds for mill tailings cleanup was introduced in the U.S. Senate in September. Utility companies oppose the bill, which would require them to purchase 50 percent of their nuclear fuel from domestic uranium sources. The bill was stalled in joint committee in mid-December, and it appears unlikely that the bill will be passed by Congress in the original form.

On a related subject, a federal district court judge ordered the U.S. Department of Energy (DOE) to schedule 25 percent or less of its total enrichment contracts of imported uranium. This will insure that 75 percent of the uranium enriched in the U.S. comes from domestic sources. This ruling is a factor in the renewed interest in domestic uranium and the letting of contracts for domestic uranium supplies to utilities.

Trona

Two tracts of land (totaling 3,599 acres) containing trona resources were leased by the U.S. Bureau of Land Management in late September. One tract was leased to Tenneco Minerals ($245/acre bonus bid) and another to Church and Dwight, Inc. ($316.33/acre), which operates a soda ash (refined trona) packing facility. A third tract offered by the U.S. Bureau of Land Management received no bids. Wyoming will collect a $500,000 bonus from the sale. Royalty rates on these tracts are 5 percent of the sale value, while yearly rental rates start at 25 cents/acre for the first year, increase to 50 cents/acre the second to the fifth years, and are $1.00/acre for subsequent years. The terms of the leases are 20 years with preferential right extensions for 10-year intervals. At the last trona lease sale, which was held in 1967, the bonus bid was $55/acre.

General Chemical, one of the five trona-producing companies in Sweetwater County (formerly Allied Chemical), sold 49 percent of its assets to ACI International, an Australian-based glass manufacturer. This acquisition may mean an increase in exports to Australia for General Chemical.

Wyoming Senators Simpson and Wallop are still unsatisfied with Japanese import restrictions on soda ash. Japanese officials responded to U.S. pressure to ease trade barriers, but, according to Simpson and Wallop, did not change any restrictions. Wyoming's senators said they would bring a solution urging lowered trade barriers before the new Congress in January.

Soda ash production in the U.S. ran 2 percent to 5 percent above 1985 levels, according to figures released by the U.S. Bureau of Mines before September. September and October soda ash production, however, dropped 12 percent below production during the same months in 1985. This may be due to closings and loss of production in the auto industry. Manufacture of automotive glass is a significant factor in soda ash demand.

Bentonite

The bentonite industry in Wyoming has been hit hard by the decline in oil prices and the resulting decline in oil well drilling. Bentonite is used primarily for drilling mud. The bentonite plant at Lovell, owned by NL Baroid, closed September 24. NL Baroid is one of the chief suppliers of mud to the oil-well drilling industry. This is the first bentonite plant in recent times to close in Wyoming. NL Baroid's mill and pits near Colony, in Crook County, continue to operate.

Cement

Mountain Cement Company continues to remodel and upgrade the Laramie cement plant that closed in December 1985. The plant is being converted from a wet process to a dry process facility. This conversion will lower production costs. The plant is currently producing cement from clinker imported to the plant. Mountain Cement is a subsidiary of Centex Corporation, which produces cement in Texas and owns several construction companies, including Ameriwest Homes of Albuquerque, New Mexico.

Sulfur

Continental Sulfur Company, leaseholders of the natural sulfur deposit west of Thermopolis, announced a proposed test drilling program on the property scheduled for December or January. This would be the first actual exploration work done on a natural sulfur deposit in Wyoming in recent years. Meanwhile, for the first half of 1986, domestic sulfur consumption decreased 11 percent over the 1985 rate, while exports fell by 33 percent.

Other Industrial Minerals

The Burlington Northern Railroad has begun replacing the wood ties on its lines with concrete ties. Concrete ties manufactured in Canada are being installed on Burlington Northern lines in the Glendo area. Two plants have been proposed to manufacture these ties in the U.S., one in Washington, Idaho, or Montana and one in Colorado or Wyoming. To date, no site has been selected for either of these plants, which could produce more that 1 million ties over a four-year period.

In mid-November, Tenneco received a $40,000 grant from the Wyoming Economic Development and Stabilization Board (EDS Board) for a feasibility study for the development and marketing of a zeolite (clinoptilolite) deposit in the Washakie Basin in Sweetwater County about 20 miles south of Interstate 80 and 50 miles southeast of Rock Springs. The deposit is located on land owned by Upland Company, a subsidiary of Union Pacific Railroad. Tenneco presently mines clinoptilolite in California, where most of its production is used for the treatment of water. If Tenneco proceeds with the project after completing its study, it would take an estimated five to six years to bring the project on line.

Zeolites are minerals with a high ion-exchange capacity. They can be used as catalysts in petroleum refining, filters, odor absorbents (like kitty litter), water softeners, pollution control agents, and for other uses. Sweetwater County and other areas of the state contain significant zeolite deposits (see Harris, Hausel and Meyer, 1985, for a map depicting known zeolite occurrences in Wyoming).

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METALS AND PRECIOUS STONES

The historic Carissa Mine in the South Pass greenstone belt at the southern tip of the Wind River Range was recently purchased in part by Consolidated McKinney Resources of Vancouver, British Columbia. Consolidated McKinney Resources announced that it had begun core drilling on the property and that further tests would be conducted, depending on the initial results.

The Carissa Mine was the second largest producer of gold in the greenstone belt. Production estimates indicate that the mine could have produced as much as 53,680 ounces of gold (Hausel, 1980). The mine was developed on a one-foot-to-15-foot-wide shear zone in 2.8-billion-year-old metagreywacke of the Miners Delight Formation. The shear was tested and mined to a depth of 400 feet and along an 800-foot strike length. Five levels were developed in the mine. Armstrong (1948) reported the shear could be traced on the surface for at least 1,000 feet. The ore tenor reportedly averaged 0.32 ounce per ton gold (Hausel, 1980).

The historic mine operations concentrated on recovering high-grade ore in the narrow, well-defined shear zone. The adjacent wall rock, however, is highly fractured over a width of 150 feet to 200 feet and contains numerous quartz stringers and lenses. To test the potential of the wall rock to host commercial mineralization, the Geological Survey of Wyoming collected a 30-foot-long composite chip sample in the wall rock north of the shear. Splits of this sample assayed 600-parts-per-billion (ppb) (0.018 oz/ton) gold and 2.4-parts-per-million (ppm) (0.07 oz/ton) gold. Further tests need to be conducted, but based on preliminary results, the Carissa could host large tonnages of low-grade ore.

The Geological Survey of Wyoming recently collected another interesting sample in the South Pass district. The sample was from a banded iron formation in the Goldman Meadows Formation (two miles north of the Carissa Mine and two and one half miles southwest of the Atlantic City iron mine in the NW¼ sec. 9, T.29N., R.100W). More specifically, the sample of magnetite-quartz iron formation came from a shallow shaft on Wyoming Highway Department property. One split of the sample assayed 27 95 percent iron and 1.1 ppm (0.03 oz/ton) gold. A sample of a quartz vein in the iron formation assayed 400 ppb (0.01 oz/ton) gold.

Preliminary geologic maps of the Radium Springs (Hausel, 1986a) and the Anderson Ridge (Hausel, 1986b) 7½-minute quadrangles in the South Pass greenstone belt were recently published by the Geological Survey of Wyoming. The Radium Springs Quandrangle covers the Lewiston gold district located along the eastern flank of the South Pass greenstone belt. Most of the gold deposits in the Lewiston district are similar to that at the Carissa Mine. Gold occurs in narrow shears in metagreywacke of the Miners Delight Formation. Samples collected in this district by the Geological Survey of Wyoming have assayed from a trace to over one ounce per ton gold. The Anderson Ridge Quandrangle lies along the western flank of the greenstone belt just west of South Pass City.

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W. Dan Hausel, Deputy Director
Geological Survey of Wyoming

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Winter Agricultural Outlook

It is difficult to build much optimism into the agricultural outlook for 1987. Food and feed grain supplies remain near record large levels, with resulting depressed prices forecast into the foreseeable future. Demand for U.S. agricultural exports continues to remain soft, despite the recent decline in the value of the dollar. Land values have not yet reached the bottom of the precipitous drop that began in 1982. The outlook for improved livestock prices is one of the few areas that offers some optimism in the coming year.

Cattle Outlook

The U.S. cattle and calf inventory report that was released February 4, 1987 marked the fifth consecutive year of declining cattle numbers. The continued reduction in U.S. cattle and calf numbers reflects the poor returns experienced by cow-calf producers since 1980. A historical perspective would indicate that prices for feeder and stocker cattle should move sharply higher this spring into next fall. Fewer available feeder cattle, coupled with lower feed costs, creates an expectation for a very positive price response for all classes of cattle. Unfortunately, changes on the demand side of the equation dampen the outlook for returned profitability for cow-calf producers in 1987.

The positive side of the register reflects a dwindling supply of feeder cattle, both in the near term and through the next two years. The estimated October 1, 1986 feeder cattle supply at 39 million head is nearly 13 million head fewer than 1974, when statistics first were recorded in this area.

Stocker operations will be hard pressed to find grass-type cattle to graze the excess grass resources as we move into the spring grass season. In 1986, approximately 21 percent of the public (BLM, Forest Service) grazing in Wyoming was reported in non-use. Although, because of changing criteria, there will not be external pressure to graze their lands in 1987, it is indicative of unused grazing resources in the state. It is likely producers will be pushing stocker prices higher as they compete with feedlots for fewer cattle in the February-April period.

Another positive factor impacting feeder cattle prices is the decline in most input costs. The demand for feeder cattle is derived primarily from the profitability (or lack thereof) in the feedlot industry. Although the fed cattle market has struggled this past year to reach the $60 mark, costs of feeding have been reduced due to sharply lower feed costs.

Cost of gain for cattle finishing in February is projected to be around $40 per cwt. This is the lowest cost of gain since the spring of 1973. Barring a major change in agricultural policy or a major weather catastrophe, cost of gain figures will remain in this range throughout all of 1987.

The negative aspects of the current market situation are connected to the demand side of the equation. Total meat supplies will continue to remain large. Poultry and pork producers are facing the same lower cost structure as cattle feedlots. It is estimated that total poultry production, which already exceeds per capita pork production, will surpass beef production by 1988. The anticipated beef promotion efforts in the coming year will take a little while to have an impact, so demand will not perceptively change in 1987.

The equity positions of most cow-calf producers have continued to erode, and financing remains a problem. Producers who have excess grass may not be able to obtain the financing to purchase stocker cattle in the spring unless they are able to obtain price guarantees for fall through forward contracting.

Grain Outlook

The U.S.D.A. estimated corn crop for 1986 was 8.2 billion bushels, down 7 percent from 1985. This reduction was due primarily to the participation in the 20 percent set aside program, as yields were estimated at 119 bu/acre, a record. Total supply for the coming marketing year is over 12 billion bushels, up from 10 billion in 1986. Prospects for exporting our way out of this excess supply dilemma are not promising. Russia had an excellent grain crop in 1986, as did most other exporting countries.

Wheat and other food grains are also facing excess supply problems. Domestic usage in the U.S. is estimated at 780 million bushels. Total supply for the 1986-1987 marketing year was nearly 4 billion bushels, approximately five times our annual requirements. Participation in the government set aside program appears to be the best production-marketing alternative for both the individual producer and the industry.

Robert D. Carver
University of Wyoming

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Job Openings Outlook

Commercial Artists and Designers

Commercial artists and designers create artwork for newspapers, magazine advertisements, book illustrations, and package design. Duties range from paste up and marking printer instructions to creating original designs and layouts. Artists and designers must enjoy work that requires abstract thinking and produces concrete results. They must have the ability to do detailed work and visualize objects from pictures and descriptions. Knowledge of sales techniques is helpful for free-lancers who must sell both ideas and finished products to clients.

Demand for commercial artists and designers is affected by national economic trends, particularly advertising expenditures; therefore, opportunities increase or decrease as business conditions change. Competition for most jobs is stiff. Employers usually require demonstration of artistic abilities, often by reviewing the applicant's portfolio. Those with good technical training or exceptional talent and creative flair will fare best.

Technical instruction in an art school, community college, or four-year institution provides the necessary training. Employers stress that aspiring artists should get an objective evaluation of their work before seriously planning a career in commercial art.

Average entry level wages for artists and designers range from $4.00 to $7.00 per hour. Average maximum wage is between $10.00 and $20.00 per hour. Wages for those who do free-lance work or hold temporary jobs vary.

Architects

Architects plan, design, and administer all types of building projects. They provide clients with design documents and information on building costs and materials; prepare drawings and specifications; and observe construction progress to make certain that contract documents are being followed. They usually work in group settings, often seated at desks or drawing boards for long hours. Much of their time is spent with clients, contractors, or other architects discussing projects. Employers of architects include architectural firms, government agencies, planning agencies, colleges, and construction firms.

Architects are required to be licensed for professional practice. State requirements for obtaining a license include: 1) holding a professional degree in architecture from an accredited school of architecture or having equivalent education, 2) completing a required three-year internship program, and 3) passing the "Architectural Registration Examination." Application and license fees are required. The National Council of Architecture (NCA) Registration Board requires that architects applying for national certification be graduates of an approved school of architecture. This allows for easier reciprocity among most states. Since Wyoming has no school of architecture, this is not a requirement of the Wyoming State Board at this time; however, the board has adopted an accredited degree requirement to commence in the year 1992. Residents not possessing a degree, who are licensed in the interim, may not be eligible for licensure in other states. Those residents interested in attaining a degree from an accredited school of architecture are eligible to study out of state through the Western Interstate Commission for Higher Education (WICHE) Professional Student Exchange Program at in-state rates, provided they meet WICHE requirements.

Employment opportunities for architects depend on economic activity and stability, level of construction, lending rates, availability of public revenue, and the number of contracts awarded to out-of-state architects. Presently, there are about 130 licensed resident architects and 625 licensed non-resident architects registered in Wyoming. A recent survey indicates a surplus of qualified applicants in the state. Opportunities are better in states experiencing rapid growth.

Average wages for new architectural school graduates are between $700 and $1,000 per month. Upon attaining licensure, wages range between $850 and $1,500 a month. Maximum wages for salaried architects are between $30,000 and $65,000 per year. Earnings vary for self-employed architects.

For more information, contact Juanita M. Ackerman, Wyoming Career Information System, Administration Building Room 314, 2810 House Avenue, Cheyenne, Wyoming 82001, or phone (307)635-3055.

Wyoming Coincident Indicators Index

During the third quarter of 1986, the Wyoming Coincident Indicators Index (WCII) continued declining in July and August then registered a small rebound in September for the seasonally adjusted data series. The WCII is derived using several economic variables, the movements of which tend to coincide with movements in the overall economy. It is computed by the Division of Research and Statistics, Department of Administration and Fiscal Control.

The WCII is composed of four variables; however, one of these four is a composite industrial index which itself is further made up of three distinct industrial sector variables. Thus, there are a total of six variables which actually are used to derive the WCII. The four WCII variables are; 1) total state employment, 2) total wages reported for the quarter, 3) total sales and use tax collections for the quarter; and 4) an industrial index. This fourth variable, the industrial index, is a composite index of variables representing three of Wyoming's industrial sectors. The mining sector is represented by the number of active oil-well drilling rigs. The agricultural sector is represented by a composite index of prices received for all Wyoming agricultural commodities, and finally, tourism is represented by the gallons of motor fuels plus gasohol sold each month.

Index values for almost all of the six variables were down from levels of a year ago. The exception was the agricultural commodities price index, which was at approximately the same level as a year ago. The rig count was off approximately 75 percent from levels of the previous year, once again reflecting the severe impact which falling oil prices have had on the Wyoming economy. Sales and use tax collections were off about 14 percent and total wages almost 11 percent from year-earlier levels. Overall, the seasonally adjusted index was down by around 7 percent from the third quarter 1985 to the third quarter 1986.

Early signals for the fourth quarter of 1986 continued to indicate general weakness and further declines. The count for active oil drilling rigs does seem to be increasing for a change, but tax collections remain low, indicating weak spending patterns due to falling total wages.

Steve Furtney, DAFC

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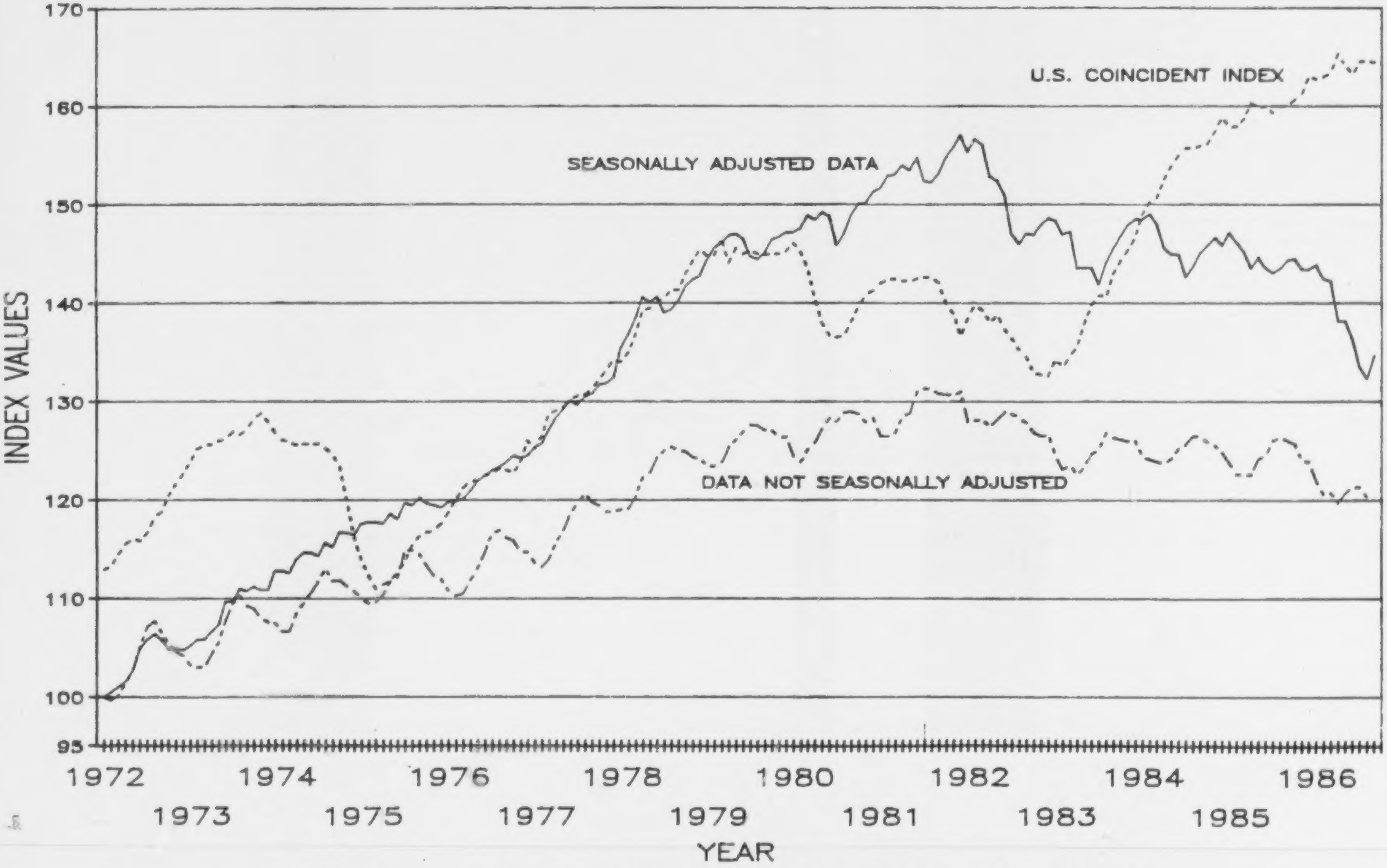
WYOMING COINCIDENT INDICATORS INDEX
JANUARY 1972 THROUGH SEPTEMBER 1986
JANUARY 6, 1987



Shaded areas represent U.S. recessionary periods.

INDUSTRY PROFILE

Industry Profile

A Wyoming Government Review

As an economic sector, government is unique. It is essentially a service industry, but its aim is not profit. The machinery of government arises from a complex web of societal aspirations that loosely translate as the "common good." Public laws attempt to transform such shared values into concrete actions through various programs and administrative agencies. The necessary and sufficient province of government is commonly in dispute, and almost always in flux, as power shifts with changes in political fortunes. By its regulatory powers, government can impede or hasten; by its spending powers, government provides services, employment, and some measure of stability.

The purpose of this article is to examine the government sector of the Wyoming economy. This will be accomplished first by presenting an overview of the sector, and then by examining each of the sector's three major components (federal, state, and local).

OVERVIEW

The government sector was the largest employer in Wyoming during 1986, according to projections prepared by the Department of Administration and Fiscal Control (DAFC), a pattern that is expected to remain unchanged at least through 1988. In 1986, the government sector was projected as the largest employer in Albany, Big Horn, Carbon, Converse, Fremont, Johnson, Laramie, and Washakie counties. According to Bureau of Economic Analysis (BEA) data published for 1984, the government sector was also the largest contributor to state personal income at slightly more than $1 billion. This was followed by the mining sector ($968 million) and services ($579 million). Government employment accounted for 16.66 percent of total state personal income in 1984.

As the state's population grew during the decade of the 1970s, and as more services were required, the government sector also grew. In 1974, the government sector employed 29,971 persons; by 1983, that number had grown to 42,972. Government employment as a percentage of total state employment, however, expanded rather modestly. In September 1986, the government sector accounted for 21.1 percent of total state employment. A total of 54,000 persons worked in the government sector, of which 8,300 were federal employees, 13,400 persons worked for the state, and 32,300 persons worked for local governments.

A 30-year view of state government appropriations from all sources shows rather spectacular growth. During the 1953-1955 biennium, according to a study published by the State Auditor in 1982, state appropriations were $76,984,510. Such appropriations ballooned to $1,522,646,183 in the 1981-1982 biennium, an increase of 1,878 percent. The average biennial increase during the period was 24.3 percent, ranging from a low of 5.8 percent during 1961-1963 to a high of 42.9 percent in 1981-1982. Part of the increase can be attributed in inflation, which ran at 240 percent over the period. Population growth was also a major factor. Between 1950 and 1970, Wyoming's population increased by a modest 14.4 percent. During the boom years of the 1970s, however, the population grew by 41.3 percent.

General Fund revenues also increased dramatically over the period. General Fund income increased from $13,122,886 in fiscal 1954 to $269,328,267 in fiscal 1981, an increase of 1,952 percent. One major source of new revenue during the 1970s was the state mineral severance tax. Thus, while the energy boom placed new demands on government services, it also provided large amounts of revenue to finance new government operations.

Between February 1985 and February 1986, only three sectors of the Wyoming economy exhibited employment growth. The government sector grew by 2.9 percent, while service employment increased by 6.5 percent, and transportation and public utilities employment increased by a scant .7 percent. Among all states in the U.S., Wyoming ranks forty-ninth in number of government employees; the state also has the smallest population and the smallest civilian labor force.

Federal Government

More than half (50.9 percent) of Wyoming's dry land acreage is owned by the federal government. Thus, the federal government exerts considerable influence over resource management in the state. The "public" quality of federal land ownership is viewed as a benevolence by some and as a nuisance by others. In any case, it is a presence that cannot be ignored.

During the early days in Wyoming history, the two pillars of the Wyoming economy were the railroad and the government. The census of 1870 reported 1,534 soldiers served at Wyoming forts, along with 1,139 civilian support personnel. Many others depended upon the forts for their livelihoods. Contract personnel supplied the forts with such commodities as hay, coal, and wood. Others hauled treaty goods to the Indians under government contracts.

The creation of Yellowstone National Park by an act of Congress in 1872 was an important step in the evolution of federal lands management in Wyoming. The park was set aside by the federal government in order to prevent private exploitation and to protect its many natural wonders. The original park was rectangular in shape, some 62 miles long and 54 miles wide. The park was enlarged in 1929, when the east and north boundaries were revised.

The national conservation movement of the 1890s provided the impetus for further federal involvement in Wyoming. Under an 1891 act of Congress, Wyoming lands were set aside as federal forest reserves. The Yellowstone Reserve was established in 1891, followed by the Big Horn and Uinta (1897), the Medicine Bow (1902), and the Sierra Madre (1906). At first, management in the reserves was lax. But in 1902, A.A. Anderson began to transform forest management. Anderson was assigned a 9,500-square-mile area surrounding Yellowstone Park and divided the forest reserve into four units (the Shoshone, Wind River, Absaroka, and Teton). Anderson and his rangers moved swiftly to limit use and to eliminate grazing excesses on the newly created management areas, incurring the wrath of local sheepmen along the way.

In 1906, restrictions on forest use and the introduction of grazing fees brought such vehement protests that Congress barred extensions of forestlands in six western states unless the approval of Congress obtained. By then, however, most of the forested areas in Wyoming were already under federal jurisdiction. One effect of the limitations was to sharpen competition between cattle and sheep operators for use of the remaining public domain.

Administration and use of public lands by 1900 was marked by controversy, confusion, and outright fraud. Federal land policies were often ill-suited to the Wyoming climate and range, allowing too little land for productive agriculture. To add to the uproar, Wyomingites themselves often did not agree on how the land should be used.

In 1904-1905, a public land commission undertook an investigation of federal land policies in the West. Of 1,400 stockmen contacted during the investigation, 1,090 indicated a desire for some form of government control over the public lands. Wyoming stockmen contacted during the investigation favored federal control of grazing lands by a margin of 175 to 23.

Another source of controversy was the disposition of mineral rights on public lands. Beginning in 1873, coal lands could be purchased for not less than $20 per acre within 15 miles of a completed railroad; if the land was more than 15 miles from a railroad, the purchase price was $10 per acre. While the Union Pacific Railroad had received large coal holdings as part of its land grant, even more was desired. When it was unable to obtain the additional coal lands desired, the Union Pacific Coal Company enlisted an assortment of vagrants and respectable citizens to advance its cause. Lands were fraudulently acquired for agricultural use, then transferred to the coal company, or individuals bought coal acreages legally then transferred title.

Table 2: 1984 Government Employment and Personal Income by County.

	Government Employment	Government Percent of Total Employment	Government Earnings (in thousands of dollars)	Government Percent of Total Personal Income
Albany	5,904	36.6	104,122	31.4
Big Horn	1,165	21.2	19,750	17.4
Campbell	2,595	13.4	50,030	11.6
Carbon	2,309	21.2	42,576	17.8
Converse	1,247	13.1	20,918	13.2
Crook	545	17.7	8,773	13.4
Fremont	3,807	21.5	67,272	17.8
Goshen	1,200	20.1	18,652	15.2
Hot Springs	629	20.9	10,584	14.4
Johnson	581	15.7	10,268	12.2
Laramie	13,953	32.8	281,163	28.9
Lincoln	1,151	16.0	21,382	13.3
Natrona	6,188	14.4	109,376	9.9
Niobrara	252	13.3	4,274	12.3
Park	2,571	18.3	45,640	15.1
Platte	867	21.6	14,391	15.9
Sheridan	2,676	20.6	52,595	15.0
Sublette	509	17.3	8,939	13.8
Sweetwater	3,810	17.4	67,299	12.2
Teton	1,165	13.1	20,913	13.0
Uinta	1,802	17.2	34,709	14.6
Washakie	924	17.4	16,929	14.3
Weston	681	16.1	11,279	11.1
Wyoming	56,531	20.8	1,042,730	16.7

Source: U.S. Department of Commerce Bureau of Economic Analysis.

In 1906, President Theodore Roosevelt ordered legal action to halt such practices and to recover lands that had been fraudulently acquired. In addition to the Union Pacific, proceedings were instituted against the Wyoming Coal Company in Sheridan County, the Wyoming Coal & Coke Company in western Wyoming, and the Owl Creek Coal Company at Gebo.

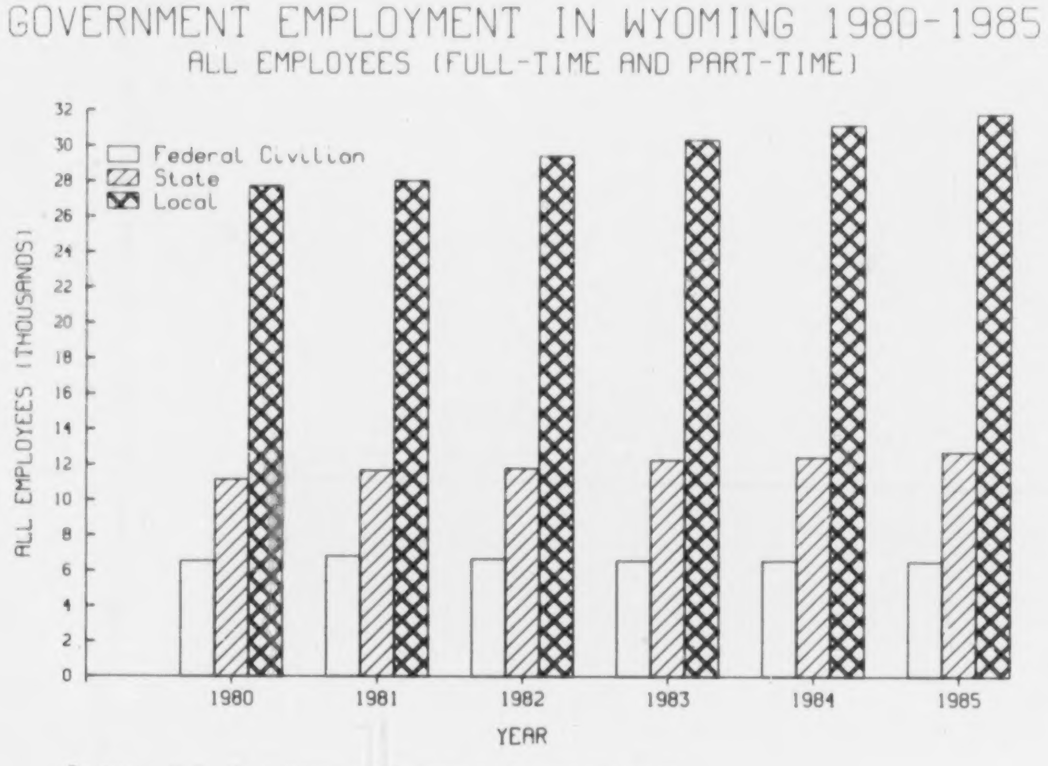
To stop the acquisition of coal properties through bogus agricultural operations, Roosevelt ordered more than 66 million acres, including about 17 million acres in Wyoming, be withdrawn until the extent of coal deposits could be determined. In 1907, the Commissioner of the General Land Office recommended that surface rights and coal rights be separated. Ranchers and farmers could thus file on the surface, while the government retained the coal rights. The recommendation became law in March 1909.

The public domain has continued to be an important, and often controversial, part of Wyoming. In fiscal year 1983, approximately 9.25 million acres were managed by the U.S. Forest Service, and 18.4 million acres were managed by the Bureau of Land Management (BLM). Another 2.4 million acres were under National Park Service jurisdiction. As of January 1985, a total of 118,254 continuing mineral leases, licenses, agreements, and permits were in effect on federal lands in Wyoming.

The military has continued to play a major role in Wyoming's federal employment. Between 1956 and 1965, Warren Air Force Base in Cheyenne became a major base for intercontinental ballistic missiles. The wing's first squadron, the 564th Strategic Missile Squadron, was the nation's first operational, tactical ICBM squadron. The 564th Atlas missile complex at Warren was the first and only one of its type constructed. In July 1963, the 90th Missile Wing was activated and the Atlas system was phased out. The Atlas system was replaced by the Minuteman I system. By June 1965, the wing was fully operational and consisted of 200 Minuteman missiles and silos spread throughout Wyoming, northeastern Colorado, and western Nebraska.

The newest addition is the MX, or Peacekeeper, missile. The original plan called for 100 missiles to be deployed in existing Minuteman silos. The number was later reduced to 50. At present, 10 missiles are operational, with the remaining 40 expected to be deployed by the end of 1988.

F.E. Warren Air Force Base is the largest federal employer in the state. A total of 3,857 military and 753 civilian personnel were



Source: U.S. Department of Commerce, Bureau of Census.

employed at the base as of December 1986. According to base public affairs, F.E. Warren contributed $204 million to the Cheyenne economy in fiscal 1986. Construction contracts during the second quarter of 1986 provided 937 full-time jobs through 65 subcontractors. In 1988, the Peacekeeper program is expected to provide 337 additional new jobs--131 civilian and 206 military.

According to statistics published by the Wyoming Employment Security Commission, there were 8,300 federal government employees in Wyoming during September 1986. In terms of goods and services produced by federal workers, the Research and Statistics Division, Department of Administration and Fiscal Control estimates that the federal government component of the Gross Government Product (GGP) was 25 percent in 1985, compared to 24 percent in the previous two years.

How much the presence of the federal government contributes to the state, versus how much it costs or hampers the state, is a matter of continuing debate and speculation. At times, the state has vented its resentment against federal interference in state affairs. In 1961, for example, the state legislature passed a law making Wyoming the only state unable to accept National Defense Education Act matching funds. The law was repealed in 1965. A more recent example involved the state's legal drinking age and the loss of federal highway funds.

In fiscal terms, assessments of state exchanges with the federal government have varied. Federal studies issued for 1952, 1958, and for the period from 1959 to 1961 concluded that Wyoming enjoyed a favorable balance in its dealing with the federal government. Taking 100 as the index number for the U.S. average, the studies concluded that Wyoming's index for its exchange with the federal government was 116 in 1952, 118 in 1958, and 128 during the period from 1959 to 1961.

In October 1985, the Wyoming Futures Project, in a report completed by SRI International, had somewhat different conclusions. The report cited inequities that resulted from larger than average federal tax burdens shouldered by Wyoming citizens. On the other hand, the report noted that Wyoming benefited disproportionately by the Reagan administration's decision to consolidate many categorical grants into block grants. Wyoming experienced a 74 percent increase in grant funds, according to the study, and received .6 percent of all federal grants to states and localities, while representing only .2 percent of the U.S. population.

In addition to fiscal issues, the report pointed out that national regulatory policies significantly impact the economic climate in Wyoming. Recreation use policies (including use limitations in the national parks), grazing regulations on public lands, and federal acid rain legislation which would affect demand for Wyoming coal are but a few of the federal regulatory areas with profound implications for business activity in Wyoming.

The report suggested the establishment of statewide citizens' committees that would monitor federal actions and organize "action campaigns" related to federal issues affecting Wyoming. "Greater understanding and awareness of individual national policies, combined with concerted action, can allow Wyoming to take advantage of the federal benefits while minimizing the negative impacts that federal policies may impose on the state," the study concluded.

State Government

In 1869, the Wyoming Territory was carved from a large portion of what formerly had been part of the Dakota Territory. Laws enacted by the territorial legislature over the next 20 years reflected a wide range of frontier values, including equality for women, compulsory education, reclamation of arid lands, and preservation of natural resources. The Wyoming Organic Act set aside two sections in each township to be used for the support of public schools. It also provided for legislative, executive, and judicial branches of government. While the legislature was intended to reflect the will of the territory's citizens, the governor and judges were appointed to office. John A. Campbell, the first territorial governor, was appointed by President U.S. Grant.

In 1889, a constitutional convention was convened as a prelude to full statehood. In addition to recognizing individual rights and establishing election procedures (after the fashion of the U.S. Constitution), the Wyoming delegates also included matters of economic significance. Land and water questions were examined, as well as questions related to business expansion and labor. Water was declared to be the property of the state; courts of arbitration to settle labor disputes were included, and corporations were guaranteed freedom of enterprise. On July 10, 1890, Wyoming became the forty-fourth state admitted to the Union.

Among the early priorities established by state government was creation of Wyoming's social institutions. The Board of Charities and Reform was provided for in the state's constitution (1890) and was composed of Wyoming's elected officials. A penitentiary was completed in Rawlins (1898) and a State Training School was opened in Lander (1907). Other institutions included a state mental hospital at Evanston, a tuberculosis sanatorium at Basin, and facilities for troubled young people.

At the same time, the government also grew in other directions. Some functions, like the Board of Land Commissioners and the State Canvassing Board, were provided for in the Wyoming Constitution. Others were created by statute as the scope of state government continued to change. Among the first state boards created by statute were the State Board of Pardons (1905), the State Board of Deposits (1907), and the Commission on Prison Labor (1911).

Even before statehood, education was high on the list of state priorities. In 1886, provisions were made for construction of the University of Wyoming, at a cost not to exceed $50,000. Free public schools were provided for in the Wyoming Constitution. As noted earlier, the state received two sections per township for the support of public schools. The constitution provided that such land should not be sold for less than three-fourths of its assessed value, and never for less than $10 per acre. Under conditions where school lands were sold, it was intended that the state should retain all mineral rights.

When Wyoming became a state, income from permanent land funds and property taxes were sufficient to support the state's schools, institutions, and administration. Expansions in industry and a growing population, however, place new demands on government. The State Board of Equalization was created by constitutional amendment in 1910 in order to reevaluate taxes and to distribute income. As new needs arose, additional state agencies were also added, including the Utilities Commission, the Wyoming Highway Department, and the Department of Commerce and Industry.

Today, the Wyoming State Government can be divided into 11 functional categories. General government includes 12 agencies, departments, and offices. Four of the five top elected officials can be included in this category (excluding the superintendent of public instruction). In recent years, one significant change in this functional category was creation of the State Economic Development and Stabilization Board under the Governor's Office.

The education, libraries, and museums function includes the Department of Education, the University of Wyoming, the Wyoming Community College Commission, the State Library, and the Museum and Historical Department. The hospitals, health, and social services function includes the State Hospital, the State Training School, the Pioneer Home, and the Department of Health and Social Services. Between 1983-1984 and 1985-1986, the Department of Health and Social Services experienced an increase of more than 15 percent in personnel, due largely to a reclassification of department homemakers as employees rather than contractors.

Manpower services is the fourth functional category of state government. This category consists of the Employment Security Commission, Manpower Planning and Coordination, the Department of Labor, and the Wyoming Workers' Compensation Department. Authorized positions in the category have remained stable in recent years.

The corrections and law enforcement function includes the State Honor Farm, the State Penitentiary, the Wyoming Women's Center, and the Board of Probation and Parole. Some personnel increases were experienced between 1983-1984 and 1985-1986, especially at the penitentiary, where a 122-bed expansion at the facility necessitated an increase of 39 in the number of authorized positions.

The safety and regulations area consists of 12 agencies which regulate corporations and private industry in order to safeguard Wyoming air, land, and water, or to protect the public from unsafe or unfair conditions. Between 1983-1984 and 1985-1986, there was a 7.5 percent increase in authorized personnel, with

Table 3: 1985 Estimated Employment by Selected Occupation.

	State Government*	Percent of Total Employment	Local Government*	Percent of Total Employment	Educational Services	Percent of Total Employment
Managers & Officers	370	4.7	465	5.2	1,065	4.7
Professional & Technical Occupations	3,350	42.4	1,405	15.7	13,475	59.3
Sales Occupations	60	0.8	10	0.1	80	0.4
Clerical Occupations	1,500	19.0	2,135	23.8	3,460	15.3
Service Occupations	1,690	21.4	2,625	29.3	2,910	12.8
Agriculture, Forestry, or Fishery	65	0.8	315	3.5	60	0.3
Production & Maintenance Occupations	865	10.9	2,010	22.4	1,630	7.2
Total	7,900	100.0	8,965	100.0	22,680	100.0

*Hospitals and education are not included in this group.

Source: Wyoming Occupational Employment Statistics, Wyoming Employment Security Commission.

most agencies in the functional category experiencing modest increases of from one to five positions. Agencies that experienced appropriations increases during the period included the Department of Environmental Quality ($76.7 million), Disaster and Civil Defense ($4 million), and the Insurance Department ($27.7 million). On the other hand, the Liquor Commission experienced a decrease in appropriations totaling $25 million. Most of the budget increases were from federal sources.

The resources and recreational category of state government is made up of 12 agencies involved either in the development of Wyoming's resources, or with the promotion and enhancement of recreational opportunities. Between 1983-1984 and 1985-1986, full-time positions increased by 34, while part-time positions decreased by 31. Appropriations over the period decreased by 32 percent, due largely to reductions in funding for water projects.

The State Highway Department is the main component of the state's transportation function, although the Aeronautics Commission can also be included. Nearly all the $114-million increase in highway funding between 1983-1984 and 1985-1986 was from federal sources. However, Highway Department officials are anticipating reductions in federal funding during 1987.

Professional and commercial licensing activities are performed by state government through 17 boards and commissions. The purpose of such activities is to screen, test, and license practitioners in various endeavors, and to assure a minimum level of competency in specific technical or professional fields.

The state's judicial branch forms the tenth functional area. This includes the 17 judicial districts, the Wyoming Supreme Court, the Board of Law Examiners, the Judicial Supervisory Commission, and the State Law Library.

The final functional area is the Legislative Service Office, which serves as a support function to the legislative branch of government. All activities, programs, staffing, and funding for the Wyoming State Legislature is included within this functional area.

In May 1985, according to the Wyoming Employment Security Commission, operating engineers comprised the largest occupational group in state government. A total 565 operating engineers were employed by the state, which represented 7.2 percent of the total state government work force. Next in terms of total employee numbers were nurses' aides or orderlies (500), secretaries (465), and civil engineers (420). Executive, legislative, and administrative managers accounted for 365 jobs, or 4.6 percent of the state government labor force.

Some portions of state government have grown more than others over the past several decades, in response to changes occurring in the economic and social fabric of the state. According to a study of state appropriations conducted by the State Auditor in 1982, state government had grown to 102 institutions, agencies, boards, commissions, departments, and judicial districts by 1982. This included 81 governmental units in the executive branch, 20 in the judicial branch, and the Legislative Service Office.

In the general government category of services, most of the growth over the past 30 years occurred during the period from 1969 to 1982, or during the energy boom years of the 1970s. Appropriations doubled between 1955 and 1969; between 1969 and 1982, however, appropriations increased by over 18 times. One significant factor in this increase was the creation of the Department of Administration and Fiscal Control (DAFC) in 1971. Between 1971 and 1982, according to the State Auditor's report, DAFC accounted for an average of 23 percent of all general government appropriations.

The education, libraries, and museums function received the largest portion of General Fund appropriations during the 30-year period, according to the report. The University of Wyoming received more such appropriations during the period than any other agency of state government. Spending for community colleges also increased dramatically.

The safety and regulation function also grew substantially, especially during the 1970s, as energy development placed new demands on state government. The Department of Environmental Quality became the largest agency in the category, receiving 34 percent of all General Fund appropriations flowing to safety and regulatory agencies during the 1981-1982 biennium. The category of hospitals, health, and social services also grew substantially over the 30-year period. By the final biennium, the Department of Health and Social Service had become the second largest recipient of General Fund appropriations in state government.

As noted previously, the increase in appropriations can be attributed at least in part to inflation and population growth, especially during the decade of the 1970s. Both population growth and industrial development during the 1970s placed new demands on state government services. New revenues were also generated through such vehicles as the state mineral severance tax. The outlook for future growth, however, has changed markedly. The effects of falling oil prices and a general weakening in the economy have forced state planners to lower General Fund revenue expectations. Such lowered projections "may well initiate the most significant changes in spending at the state level in the past 30 or more years," according to the State Revenue Estimating Group. In December, the group estimated that General Fund revenues would slide to about $328 million in 1987 and to $313 million in 1988 (for a more detailed discussion of current revenue estimates, see the "Minerals Outlook: Overview" elsewhere in this publication).

Local Government

Local governments, in a legal sense, are creatures of the state. General laws governing the operation of town, city, and county governments are determined by the Wyoming State Legislature. Such matters as salaries for county officials, duties of officers, and powers of local officials are set by state law. In this way, some degree of uniformity is ensured. In Wyoming, there are currently 95 incorporated municipal governments, along with 23 county governments.

In 1867, there were only two counties in what would become Wyoming. Laramie County embraced the eastern half of the state, while Carter County (later to become Sweetwater County) extended westward to the eastern boundary of present-day Uinta County. When Wyoming became a territory in 1869, there were only four counties--Albany, Carbon, Laramie, and Sweetwater counties. Thus, the seats of local government in the early days were clustered along the route of the Union Pacific Railroad. By 1921, all 23 Wyoming counties had been created.

In October 1985, according to the U.S. Bureau of the Census, there were 31,725 local government employees in Wyoming. This included 18,950 persons employed by school districts, 5,902 persons employed by county governments, 5,100 employees of municipal governments, and 1,773 persons employed by special districts. The total payroll for local government employees was more than $45 million.

School districts account for the biggest proportion of local government spending. During the 1984-1985 school year, total school expenditures amounted to over $511 million in Wyoming. Over 53 percent of the total outlay was spent on instruction, 30.9 percent on general support, and 8.6 percent on instructional support. Only 1.4 percent of the total was spent on capital outlays. In 1986, according to the State Department of Revenue and Taxation, 69 percent of city property tax dollars and 76.9 percent of county property tax dollars expended went to support schools.

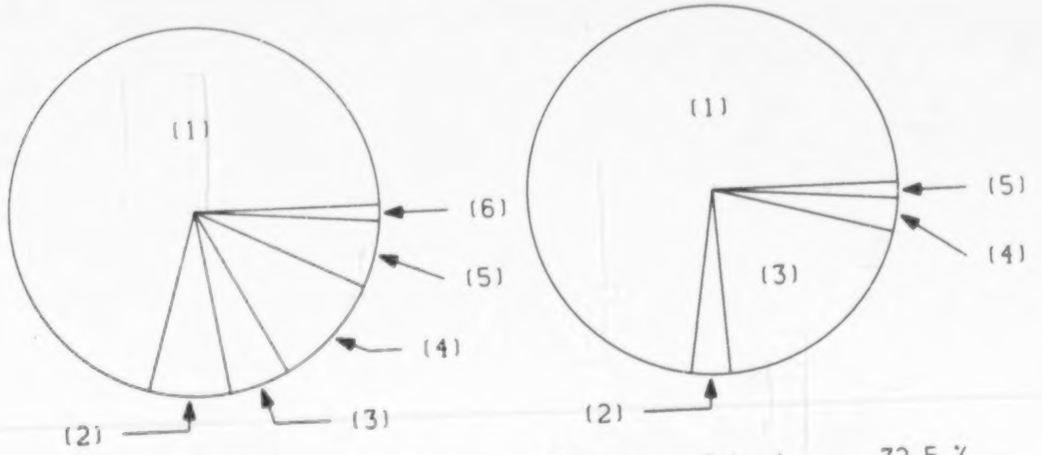
With the drop in oil prices, 1986 marked a significant departure from recent trends in local property taxes. Assessed valuations were down overall by 6.6 percent, and tax levies decreased by nearly $48 million, according to the Wyoming Taxpayers' Association. In all, 20 counties experienced decreases in assessed valuation, ranging from a drop of 1.12 percent in Teton County to a drop of 21.53 percent in Carbon County. Only three counties--Converse, Crook, and Johnson--registered increases during the period. In addition, due to a one-year delay between mineral production and tax assessment, the big drop in oil prices experienced in 1986 will not be reflected until 1987.

"Property taxation, by nature, is normally less volatile than either taxes on consumption or income," according to the Taxpayers' Association. "However, with Wyoming relying on

1986 PROPERTY TAX SUMMARY

WHERE IT COMES FROM
Total Assessed Valuation
7830.7 MILLION DOLLARS

WHERE IT GOES
Total Taxes Levied
517.5 MILLION DOLLARS



(1)	Mineral Production	70.4 %
(2)	Public Utilities	7.1 %
(3)	Mineral Equipment Industrial Plants	5.3 %
(4)	Town Lots/Improvements Transportable Homes	10.3 %
(5)	Lands/Improvements/ Farm Equipment	5.9 %
(6)	All Other Property	1.4 %

(1)	Public Schools	72.5 %
(2)	Community Colleges	3.4 %
(3)	County Governments	19.8 %
(4)	Special Districts	2.9 %
(5)	Municipalities	1.4 %

Source: Wyoming Property Taxation 1986, Wyoming Taxpayers Association.

mineral taxation as a major component of its property tax base it can be and is showing up to be a tax which is subject to major change in yield. Accordingly, units of government with heavy reliance on property tax in Wyoming should prepare for whatever eventualities lie ahead, particularly those units of government having large mineral production within their boundaries." Counties relying heavily on oil and gas production for property taxes include Hot Springs, Park, Uinta, Sublette, and Big Horn counties. In only six counties, moreover, can it be said that the oil and gas component of the tax base is of no or minor significance.

S.T. Mast and Catherine Novotny, IPR

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Sullivan and Hathaway:

Standing at the Threshold of Economic Change

In their political careers, Stan Hathaway, Wyoming's former two-term governor, and newly elected Governor Mike Sullivan have stood at thresholds in the state's economic life that are as different as up from down.

In 1973, the Arab Oil Embargo catapulted Wyoming into a new era of economic prosperity and growth. The rush for domestic energy reserves in the wake of gasoline shortages and rising prices meant more people, new opportunities, and bigger paying jobs in the state. Wyoming, it sometimes seemed, was drowning in its own good fortune. To say the least, the future looked bright, if not always certain. The machinery of government began to move, often slowly and incompletely, to keep pace with the burgeoning activity in the state's coal fields and oil patches. Perhaps only a true visionary would have thought to create new businesses divorced from energy when seemingly too much activity was already enough.

But like railroad booms, cattle booms, and oil booms that have periodically occurred during the past 100 years, the energy boom of the mid-1970s and early 1980s did not last. By 1983, the boom had largely settled into a more stable production mode, save for a late-blooming and short-lived heavy construction boom in southwestern Wyoming.

Even while the pace of energy related activity was less frenetic than at the height of the boom, the outlook was not desperate. Indeed, the permanent legacy of the boom was impressive. State Government and most counties still had larger tax resources than before the boom, resources heavily dependent on oil production and prices that were running the mid-$20s range. Further, oil exploration continued at a reasonably strong pace, averaging 93 active rigs during the second quarter of 1984.

Then the price of oil dropped, the result of a worldwide glut. Tax sources based on oil production eroded, and new exploration fell. During the second quarter of 1986, on average only 25 rigs were active in the state. Thus, the thresholds of state history upon which Governor Stan Hathaway once stood, and upon which Governor Mike Sullivan now stands, became as different as prospects for a sunny day or a solar eclipse.

Governor Sullivan enters office at a time of austerity in state government. "Downsize"--the bureaucracy, spending, and people's expectations--has become common political parlance.

"I think the greatest challenge is to somehow determine the method or means to redirect the economy," Governor Sullivan said, "or to fall into an economy that redirects itself."

Some of the tools for redirection are already in place. Governor Sullivan included in his list the State Economic Development and Stabilization Board, the University of Wyoming, and the Futures Project. But progress could be painfully slow, and often times, not within the realm of state control. "I don't think there are going to be any immediate turnarounds, short of the direction that national and international issues take us," he said. He added that he would continue to press for an oil import fee because of its importance to Wyoming and the nation: "I see us dismantling our domestic oil industry, and I am convinced that this is the wrong direction for us to go," he said.

While the state is having financial difficulty, it is a long way from being broke. Much of the money, however, is tied up constitutionally in special accounts. Gov. Sullivan cautioned against taking a "meat axe" approach to government programs as a way to solve the problem. Instead, he recommended a blend that includes judiciously scaling down the government and tapping reserve accounts, such as the "rainy day" account.

The public should not expect the state government to spend Wyoming into renewed prosperity. Agencies concerned with economic development do not herald any second coming of the "New Deal."

During the campaign last fall, Governor Sullivan said he felt some people expected state government to rescue Wyoming's flagging economy. "I think it has to be a catalyst," he said, "but I am convinced the private sector is going to do the economic development, if it is to be done. We need to be deeply involved. But what we have got to do is try to generate and incubate private sector involvement," by providing loans, grants, and venture capital funds by various means and to various degrees.

Due to recent increases in the price of oil, Sullivan said he is cautiously optimistic that the outlook may be better than was thought at the beginning of the year. Most significantly, the world price of crude oil has risen in recent weeks, following a production-quota agreement by most members of OPEC. Even so, he added, "I don't think we can budget on optimism in view of the direction that we have been taking."

Being the administrative boss of state government during a difficult period presents both management opportunities and challenges. "I think the opportunity is certainly that people are focused on the problem," Governor Sullivan said. "It allows you to do things that were not palatable in other circumstances, and maybe even some that have been tried before but were not successful, because of the situation we were in." He added that present difficulties also make it less likely people will try to "obscure funding" for marginal requests. From a challenge viewpoint, he said the biggest job is to prevent conditions from deteriorating further and to prevent the downturn from becoming a convenient occasion for dismantling worthwhile segments of government.

When Governor Stan Hathaway entered office in 1967, the state economy was generally weak. Through various initiatives, Hathaway said, improvements in the economy were achieved "with the help of many, many people and some good luck." Indeed, he added, Wyoming's economy had improved greatly and there was "money in the bank" even before the Arab Oil Embargo of 1973.

But it was the embargo and escalating oil prices that propelled the energy boom. And at the threshold of the boom, late in his administration, stood Governor Stan Hathaway.

While the prospects for economic growth were brighter in 1973 than they appear in 1987, some seeds of the state's present difficulty may have been sown during the times of plenty. For one thing, Hathaway said, the state became preoccupied with regulating business activity.

"We lived in hog heaven for a decade, and our objective seemed to be to fence people out," he said. "We're paying for that now. As the governor (former Governor Ed Herschler) put it, 'you're welcome to come but it has to be on our terms.' Our terms have essentially been more taxation, more regulation."

In addition, he said an attitude seemed to develop that since minerals were essentially paying the tax bills, no more development or change was deemed desirable. "But the economy is not like a valve. You can't twist it on and off at your pleasure. The time you need to work on diversification is when the economy's good, not when it's bad."

Even as the boom progressed, Hathaway asserted, the state neglected opportunities to develop energy related projects that would have worked to the long-term advantage of the state. "We had some golden opportunities to sink ourselves in the coal business a lot deeper than we did with the slurry lines," he said. "Two of them were killed. There was a window of opportunity to do those. You can't begin to do them now. If the slurry lines had gone in, we would be shipping 50 million tons more coal out of the state each year."

Still, the state in many ways is much better off today over what it was 20 years ago, Hathaway said, present difficulties notwithstanding. He pointed to state mineral trust funds and to jobs in coal mines and power plants that did not previously exist. And he noted a reshaping of the public's attitude toward development, which he said too often in the past reflected a hostile attitude toward business. One troubling note for Hathaway in the renewed interest in economic development is "all this talk that tourism will carry this state. It won't. It's helpful, it's good for the economy, but it's the environmentalist answer to development. And it just won't work. We can't get enough of it. We've got too much competition."

During the boom, Hathaway contended, the flow of money from mineral royalties and severance taxes raised expectations too high. The time has come to lower our sights. "It went up too fast, and it went too far," he concluded. "Now we're going to come back to reality."

S.T. Mast, IPR

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Belt-tightening Squeezes State Employees

(The following is excerpted from an interview with Dennis Smyth, executive director of the Wyoming Public Employees Association. The interview, which was conducted in January, highlights some of the challenges faced by public employees during a period of state budget difficulties.)

WQU: To begin, please describe who your organization represents.

Smyth: We represent the classified state employees of the executive branch of state government.

WQU: How many people are in that group?

Smyth: It depends. You could ask the retirement system, DAFC, or the auditor and get different figures. The figure we get from the auditor's office says there are around 6,800 full-time employees.

WQU: What do you consider to be the biggest challenge facing state employees at the moment?

Smyth: I think there are two perspectives. One major challenge for state employees is accomplishing their jobs, with reduced resources available to them. Second, I don't think state employees will see their incomes increase much. It is a two-edged sword; one that affects employees personally and the other that affects the job they can do.

WQU: During the 1970s, government grew as the population grew. Things are now in a downturn. With that perspective, do you think government is now too big and needs reduction, or are the services being provided all vital?

Smyth: Whether or not such services are vital is a political decision. From my point of view, Wyoming State Government is not too big. Wyoming's population is decreasing, but people have to understand that this is a rural state. Per capita, a rural state requires more public employees than an urban state. For example, Wyoming has a lot of road to maintain. It doesn't matter that there are very few people in the state, the number of road miles is the same. Agencies like the Industrial Siting Council and the Department of Environmental Quality were established to meet the challenge of industrial development and to put some controls on it. Right now, that is gone. We could sit back and say we don't need those departments. You may not need them at the same level, but I think it would be shortsighted to do away with such operations completely. Someday, I hope oil and minerals will come back; we don't want to get caught like we were when the last boom hit Wyoming. Then, we were not prepared at all. We were not prepared because we did not have the DEQ, and we did not have the Industrial Siting Council.

WQU: There has been some criticism of state employees for complaining about limited furloughs. Do you think such criticism is valid?

Smyth: I think state employees are aware of the difficult situation. You have a couple of things happening. One is that state employees have not really suffered the threat of RIF (reductions-in-force) or layoffs. They have not been furloughed or seen salaries frozen before. I don't think it is shocking that they have reacted. It is like GM people being furloughed after 10 years. It comes as a shock. I think state employees are very willing to do their share. State employees have gone through a 2 percent raise, a 5 percent raise, then no raise, so they don't think they have really gotten ahead with the economy. Maybe what state employees don't understand is that government is their industry. When your industry is in trouble, the employees take the brunt to get things back into focus for management.

Unfortunately, I also think part of it is that state employees are considered second-class citizens. Historically, public employees have been considered people who can't find jobs elsewhere. You can go back to the 1930s and 1940s. The Fair Labor Standards Act did not include public employees; the National Labor Relations Act provides for collective bargaining for all workers, except public employees. Laws like this put public employees in a totally different category than workers in private industry.

WQU: At the same time, the government sector in Wyoming is an important economic force. As a sector, according to state estimates, it is the largest employer in the state. Do you think there is a public misconception concerning the importance of government as an economic force?

Smyth: Yes. The public basically had a good deal until now. Now, they have got to look at public-employee spending power. If you cut salaries, you are going to hurt a lot of little stores and businesses. Laramie and Cheyenne have been pretty stable because of government employment, despite extreme down trends in other parts of the state. Any county with a state institution is going to have a lot of state employees. Fremont County is the third largest county in terms of public employees. There, you have a community college and the

Wyoming State Training School--almost 600 employees.

WQU: When hiring freezes become necessary, how should they be implemented?

Smyth: I don't think there should be hard-and-fast freezes. That means you are not going to do your job as government. I don't necessarily think a department should be turned loose to make its own decision. The governor is responsible for deciding what level of service he wants to provide, so I think the governor ought to decide who can fill what positions and when. If a department can sell the governor, then the governor can make a decision to fill positions for the good of the state. If the department cannot sell the absolute, immediate need, then the freeze remains in place. We represent D-PASS (Department of Public Assistance & Social Services) workers. They are really overworked in some areas. Welfare and social work is very demanding, so you have burn-out. People are retiring and quitting. If you don't fill those positions, that puts unfair pressures on the people who are left, so they burn out. Then the agency can't do its job. I don't think it is a question of equity in administering freezes across agencies. I think it is a question of getting the job done.

WQU: What do you see in the outlook for public employees over the next year or two?

Smyth: Candidly, if they stay even, if they do not lose salary or benefits, they will score a tremendous victory. Governor Sullivan has proposed a 3-percent raise, but how valuable a raise is depends on the trade-offs. If people are overworked, they might, for medical reasons or otherwise, be forced to quit their job in six months, so a 3-percent raise would not mean very much.

WQU: Do you think there will be any straight layoffs?

Smyth: Yes, I do. During the political campaign, people got the impression there would be 10 percent cuts across the board. Every department would share equally, which would be the worse way to do it. I think it has got to be a methodical program analysis by the legislature and the governor. I think it is going to happen during the (1988) Budget Session. To me, that is the reasonable approach. At the state penitentiary, a straight, 10-percent, across-the-board cut, in terms of guard-to-prisoner ratios, would approach a dangerous point from the employees' perspective.

WQU: Assuming there is no hiring freeze, given other elements like nominal or no salary increases, is it going to be difficult to bring qualified people into state government?

Smyth: The economic status of the state is making it very difficult to bring in qualified people. Wyoming government is not a very attractive place to work right now. Several years ago, it was very attractive. Every state takes its turn in being attractive and unattractive. People from Minnesota and Michigan came here when things went down. Now the economy in those areas is back up. I don't think Wyoming is going to stay down forever. But I think it is going to be three or four years of gradual improvement.

WQU: Amid the cash flow difficulties, it is easy to forget that this state is a long way from being broke...

Smyth: That's a point I wanted to make earlier. Part of the reaction of state employees to furloughs, I think, was because approximately two weeks earlier State Treasurer Stan Smith had a big article in the press about how Wyoming is worth $3 billion. The article really didn't explain where the money was. So when you get furloughed because the state is broke you react with some anger and disbelief. Wyoming is definitely not a poor state. Only the General Fund is poor. Most of Wyoming's funds are constitutionally protected; not even the legislature can appropriate them. Then you have $137 million in the "rainy day" account. I think there is something like $300 million tucked away in water development funds. I think that is a waste, an awful lot of that (water development funds) is fluff. It is time to reverse those appropriations, put them back into the General Fund, and spend them for something else. So the money is there to bail Wyoming out of this thing. The state is certainly not going broke. I think the state has an obligation to keep its employees whole, to keep them at least at current salary and benefits, because the state has the money to do that without busting into the reserve accounts. I don't think take-away legislation can be justified, not even in the public's eye. Small business is beginning to understand that when a state employee has a dollar less to spend, it is not just the employee who is going to take the heat. It hurts everyone.

S.T. Mast, IPR

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AFDC Payments Change with the Times

The family in virtually every society has traditionally been a fundamental institution. In addition to being an individual's primary emotional support system and the main source of intergenerational transfer of values, the American family offers a rich source for evaluating the economy at its most basic level.

The purpose of this article is to examine some conditions of instability in today's family and to analyze Aid-to-Families-with-Dependent-Children (AFDC) payments as a microcosmic aspect of government as a sector of the economy. Interviews with selected county managers of Divisions of Public Assistance and Social Services serve to update, analyze, and interpret data relating to AFDC payments as a reflection of the overall economic conditions in Wyoming.

When evaluating the process of social change, sociologists examine the interaction between demographic and technological variables. When changes of the same magnitude occur simultaneously between these two variables, theoretically speaking, there will be no social change. For example, if the population increases at the same rate that new jobs are created by the advancement of technology in society, there should be no massive disruption of existing social institutions. The in-migration needed in the "boom" economy characteristic of many Wyoming counties during the 1970s theoretically should have been equal to the number of people needed to fill new jobs in the rapidly expanding industries in order to maintain an equilibrium in the social order, when balanced with birth and death rates.

The decade from 1970 to 1980 was characterized by a 41.3 percent increase in population in Wyoming. There was a 202.3 percent increase in total AFDC payments in Wyoming during that time. The actual increase in size of AFDC grants during that period of time indicates that, for example, a family of five (mother and four children) received $244 per month in 1970 and $310 per month in 1980. These figures reflect adjustments made for increases in the cost of living and inflation. Using data from the U.S Department of Commerce, Bureau of the Census and Bureau of Economic Analysis, rates of change in population and total AFDC payments are examined (see Table 4) for the period 1970 to 1980.

Converse and Sweetwater counties had the largest demographic changes between 1970 and 1980, with 137.0 percent and 126.9 percent increases in population respectively. During that period, Converse County had a 505.6 percent increase in total AFDC payments, whereas Sweetwater County had a 126.9 percent increase in total AFDC payments. Sweetwater County's population increased by 23,332 people during the decade of the 1970s, and Converse County's population increased by 8,131.

Lincoln County had a 40.9 percent increase in population during that period, and a 1,053.3 percent increase in AFDC payments. This constitutes the highest percentage increase in AFDC payments among Wyoming counties. However, since Lincoln County had a small population in 1970, the actual increase in caseload over the decade was relatively small. It ranged from 20 in 1970, to 40 in 1980, to 70 at the present time. The period between 1974 to 1978 marked the greatest increases.

Joan Beachler, manager of the Lincoln County Department of Public Assistance and Social Services, attributed growth in AFDC payments from 1970 to the present to greater availability of services, the opening of a full-time office in Afton, the poor energy and agricultural economies of the county, increases in divorces, and increases in births to unmarried women.

Mike Beaver, county manager of D-PASS in Albany County, gave similar explanations. He added that many AFDC recipients come to Albany County to attend the University of Wyoming, thus increasing the caseload. He also attributed increases to philosophical changes and management changes in various D-PASS offices. Between 1970 and 1980, Albany County had a 10.0 percent increase in population and a 506.8 percent increase in AFDC payments. Albany County D-PASS records show that the caseload doubled between 1975 and 1980.

Other counties with large increases in AFDC payments between 1970 and 1980 included: Uinta (with an 83.4 percent increase in population and a 604.8 percent increase in AFDC payments), and Campbell County (with a 88.1 percent increase in population and a 466.7 percent increase in AFDC payments).

Several explanations have been advanced for large increases in AFDC payments between 1970 and 1980. One school of thought traces social disintegration to booms in the Wyoming economy and the resulting inadequacy of existing institutions.

The linking of rapid population growth with social problems--divorce, depression, school drop-out rates, marital tensions, juvenile delinquency, criminal activity, welfare programs, mental health problems, etc.-- became popularly known as the "Gillette Syndrome".

Another school of thought was developed through extensive empirical research. It considered the possibility that net in-migration might have integrative as well as disintegrative effects on communities and families in small towns and rural areas ("Divorce and Recent Net Migration into the Old West", by Wilkinson, Reynolds, Thompson, and Ostresh, Journal of Marriage and the Family, May 1983).

This was the first study on the subject to use quantitative indicators and multiple regression analysis. The study found that large increases in population were not accompanied by rising divorce rates and increases in

AFDC payments. However, the study did find an increase in property crimes when there was a high rate of in-migration into a community.

In the Spring 1979 Wyoming Issues, James G. Thompson concluded: "The 'Gillette Syndrome' and 'boomtowns' are not factually descriptive terms. Such terms are factually inaccurate but crowded with emotional imagery. There are certainly social problems occurring in towns experiencing rapid growth. But these problems should be specifically and objectively studied so social planning can proceed from as accurate an information base as social science makes possible."

The end of the boom has not seen a reduction in AFDC payments. Indeed, the recent economic downturn has apparently contributed to an increase in payments. For example, Campbell County D-PASS statistics indicate that people are staying on AFDC longer now than previously. This can be traced to poor economic conditions--AFDC recipients are generally the first people laid-off and the last to be rehired when conditions improve.

Robert Kuchera, manager of Campbell County D-PASS, reported that the caseload at his office presently is the largest it has ever been. There has been a steady increase in the number of AFDC cases since 1982. In addition, Kuchera reported that there is now a class of new poor within the normal population. He said that his office is now seeing intergenerational trends in AFDC recipients for the first time.

Kuchera said there are 180 cases per worker being handled by Campbell County D-PASS. Over 400 Campbell County households presently receive food stamps. In percentage terms, the number of people receiving services is at a record-high level. The unduplicated count of all households receiving services is projected to be 1,000 for March 1987. There are usually seasonal cycles of high caseloads; however, this is no longer the case, according to Kuchera, because the caseload is consistently high.

Fred Lund, manager of Sweetwater County D-PASS, reported that over 15 percent of households receive some type of services from D-PASS. During 1986, there was more than a 300 percent increase in the number of families carried over from one month to the next. This indicates a large increase in the number of people receiving emergency assistance. Also, 57 percent of applicants for services are presently being rejected. Lund traces the reason for these increases to the poor local economy.

When describing trends in AFDC, Lund reported that the numbers of cases was up in 1980 and peaked in 1983. The number declined in 1984, before trending upward again beginning in 1985.

After the boom, many unemployed fathers left town, leaving their families behind. Often the families go on AFDC until the father can find work elsewhere and relocates his family, according to Lund.

Eliminating fatherless families from

Table 4: Comparison of Wyoming Population Growth 1970-1980 with Aid-to-Families-with-Dependent Children Payments 1970-1980 by county.

	Population			AFDC Payments(in thousands of $)		
	1970	1980	Percent Increase	1970	1980	Percent Increase
Albany	26,431	29,062	10.0	79	522	560.8
Big Horn	10,202	11,896	16.6	67	274	309.0
Campbell	12,957	24,367	88.1	33	187	466.7
Carbon	13,354	21,896	64.0	159	372	134.0
Converse	5,938	14,069	137.0	36	218	505.6
Crook	4,535	5,308	17.0	17	72	323.5
Fremont	28,352	38,992	37.5	177	679	283.6
Goshen	10,885	12,040	10.6	105	371	253.3
Hot Springs	4,952	5,710	15.3	32	76	137.5
Johnson	5,587	6,700	19.9	22	70	218.2
Laramie	56,360	68,649	21.8	938	2,338	149.3
Lincoln	8,640	12,177	40.9	15	173	1,053.3
Natrona	51,264	71,856	40.2	662	1,458	120.2
Niobrara	2,924	2,924	0.0	15	59	293.3
Park	17,752	21,639	21.9	136	382	180.9
Platte	6,486	11,975	84.6	40	187	367.5
Sheridan	17,852	25,048	40.3	138	430	211.6
Sublette	3,755	4,548	21.1	6	19	216.7
Sweetwater	18,391	41,723	126.9	108	469	334.3
Teton	4,823	9,355	94.0	12	62	416.7
Uinta	7,100	13,021	83.4	21	148	604.8
Washakie	7,569	9,496	25.5	64	177	176.6
Weston	6,307	7,106	12.7	38	83	118.4
Wyoming	332,416	469,557	41.3	2,920	8,826	202.3

Source: U.S. Department of Commerce Bureau of the Census.
U.S. Department of Commerce Bureau of Economic Analysis.

public welfare rolls can be accomplished in two ways, according to Louis Kriesberg in Mothers in Poverty, A Study of Fatherless Families (Syracuse University, 1970). The first way is by preventing the establishment of fatherless families or quickly converting them back into complete families, or secondly, by preventing fatherless families from becoming and remaining poor.

Generally speaking, the number of fatherless families can be lessened by policies that reduce divorce, separation, desertion, and adult mortality and that increase remarriage, according to Kriesberg. Fatherless families can avoid poverty if the former husband-fathers are sufficiently wealthy to provide the necessary income for the families or if the mothers work and earn enough to place them above the poverty level. Poverty could also be ended by various combinations of expanded social programs, more generous public assistance programs, negative income tax programs, or family allowance programs, according to Kriesberg.

Kreisberg's recommendations for decreasing government AFDC payments include: (1) adequate day-care, (2) ending the wage differential between males and females--employment would be more worthwhile and economically rational, (3) encouraging women to consider an occupational role as part of their whole life, (4) the development of political and organizational strength among the poor, (5) a guaranteed minimum income program, and (6) information and improved means of birth control that are more widely available.

A husband in a low-status occupation, lacking an adequate income and job security, is unlikely to maintain or to leave his family economically independent if he divorces or dies. This inference is supported by the high relationship between the unemployment rate of males and the number of AFDC cases opened, according to Daniel Patrick Moynihan's classic studies (that spanned the period of time from the 1940s through the 1960s), comparing employment figures with AFDC caseloads. Moynihan's recommendation is that policies should be implemented to improve employment possibilities for men, and especially for men with limited training.

Some social stratification theorists view prejudice and discrimination as so ingrained in the social structure that rewards are set-up to be unequal. In the job market, they argue, sexism relegates women to low positions economically that confine women to "suitable" jobs which have lower pay and lower prestige, and that limit women to the lower positions in the general occupational structure (which results in women being used as a reserve labor force).

At least 50 percent of the funding for AFDC programs comes from the federal government. President Ronald Reagan recently said, "The true test of a welfare system is how many people it is able to make independent of welfare." New approaches to the administration of AFDC programs should involve the federal government at a level that would "articulate the goals and define the parameters for any reform experiment" and would maintain the level of current federal financing, he said.

The cabinet level Domestic Policy Council recommends that states should determine among other things: (1) benefit levels, (2) rules of eligibility, (3) education training and work requirements, (4) how earnings from work will be treated when benefits are determined, and (5) the extent of social services.

The Wyoming Commission for Women reported in the Fall of 1986 that 60 percent of women receiving AFDC in Wyoming were teenage mothers. Teenagers who have children are less likely to complete their education, have diminished unemployment prospects and are more likely to rely on public assistance, according to the commission. Their needs for counseling, child protection, and child care also increase. The majority of teenage mothers will look forward to a life of poverty. Divorce rates and illegitimacy rates among teenagers are also high, thus creating many single-parent families.

Joe Nies, State Program Manager of the Wyoming Department of Public Assistance and Social Services, told IPR that Wyoming presently has 4,700 AFDC cases. This represents a 100 percent increase since 1970. Nies said that existing conditions of AFDC programs in Wyoming serve to break-up families rather than keep them together.

Kenneth Keniston, professor of human development at MIT and member of the Carnegie Council on Children, defines the family as the bedrock of American society. He and the commission advocate a national family policy to help alleviate the conditions and stresses of poverty that cause one-fourth to one-third of American children to suffer basic deprivations. Their findings indicate that the "family as a self-sufficient cradle for future citizens in a myth."

Governor Mike Sullivan and D-PASS Administrator Julie Robinson have expressed support for legislation which would allow intact Wyoming families with two unemployed parents to collect public assistance payments. This would be tied to a work program. The amount of payments received by the individual family would be determined by both the family's standard of need and the cost of living in Wyoming. This approach, which ties family poverty in Wyoming with the need for rethinking economic realities, seems to be a first step in dealing with a serious social problem.

Catherine Novotny, IPR/CRIS

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ECONOMIC CHANGES

ECONOMIC CHANGES

(Editor's note: The purpose of this section is to point out areas of the Wyoming economy in which noteworthy changes occurred or in which existing trends were significantly accentuated, during the latest reporting period).

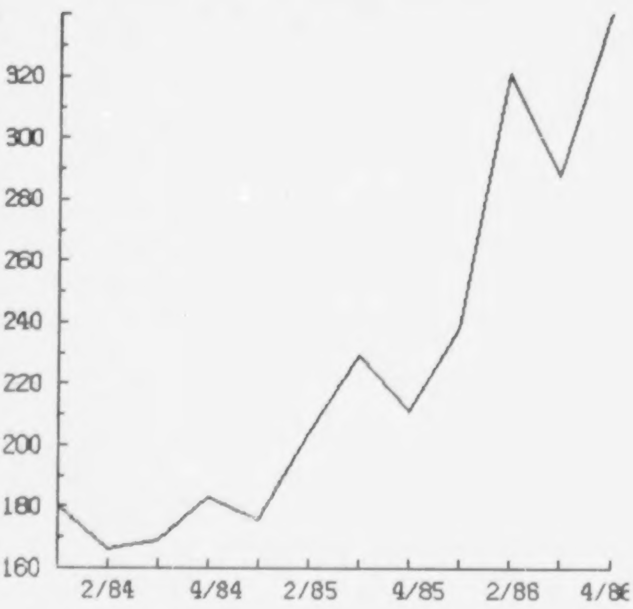
Changes in the Wyoming active rig count, the number of personal bankruptcies, and the number of building permits issued during the fourth quarter highlight the statistics for this reporting period.

The Wyoming active rig count was 38 for the fourth quarter of 1986. This is a reversal of the downward trend which characterized the second quarter (25) and the third quarter (22) of 1986.

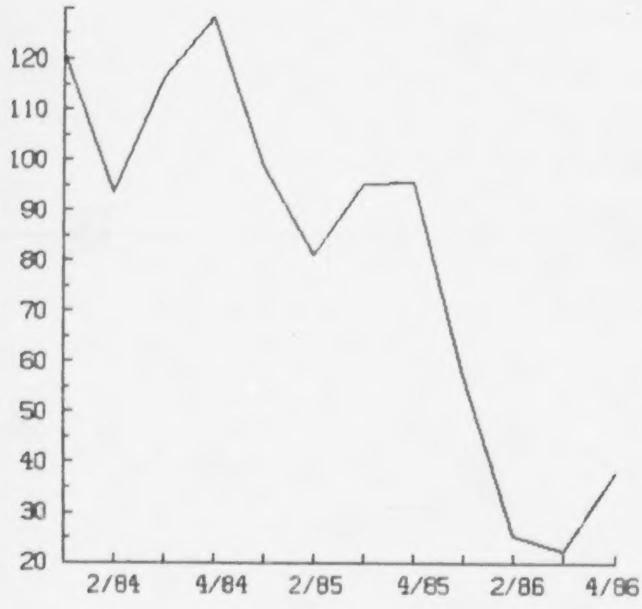
The number of personal bankruptcies reached 340 during the fourth quarter of 1986. This is the highest recorded number during the 12 quarters presently being considered. Personal bankruptcies in Wyoming increased 88.9 percent since the first quarter of 1984.

The number of building permits issued in Wyoming plummeted during the fourth quarter of 1986. There was a decrease of 760 permits in the fourth quarter when statistics are compared with the fourth quarter of 1985. The only other quarters that had smaller numbers of building permits, when analyzing 12 quarters of data, were the first quarter of 1984 and the first quarter of 1985. Sharp declines were also recorded in the value of authorized construction, new residential dwelling units, value of residential dwellings constructed, and value of nonresidential construction.

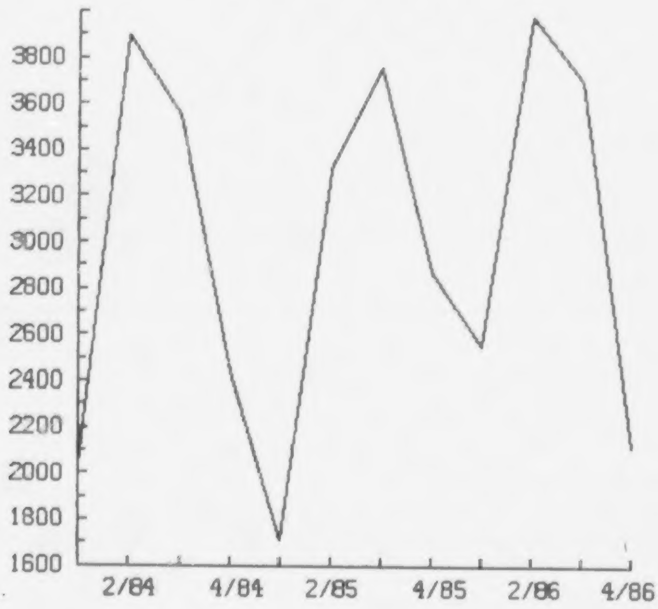
Personal Bankruptcies



Active Rig Count



Building Permits



WYOMING
DATA

Table 5: Agriculture[1]

Calendar Quarters	1/84	2/84	3/84	4/84	1/85	2/85	3/85	4/85	1/86	2/86	3/86	4/86
1. Timber Cut in Wyoming National Forests (MBF)	21261.	7625.	48671.	63055.	23591.	6564.	35705.	57834.	27236.	10067.	10867.	42510.
Price Indices[2] (1967=100)												
2. Wyoming Crops, Prices Received-Latest	269.	265.	254.	255.	257.	260.	256.	270.	260.	240.	213.	208.
3. Wyoming Crops, Prices Received-Average	270.	270.	255.	253.	254.	259.	260.	267.	262.	252.	225.	212.
4. U.S. Crops, Prices Received-Latest	267.	276.	260.	240.	246.	236.	216.	226.	213.	212.	184.	191.
5. U.S. Crops, Prices Received-Average	266.	275.	271.	251.	243.	239.	224.	219.	214.	217.	193.	191.
6. Wyoming, All Commodities, Prices Received-Latest	252.	242.	254.	248.	253.	243.	242.	234.	242.	239.	248.	238.
7. Wyoming, All Commodities, Prices Received-Average	251.	250.	246.	249.	254.	253.	237.	243.	236.	246.	241.	244.
8. U.S., All Commodities, Prices Received-Latest	265.	262.	252.	247.	246.	235.	219.	234.	222.	221.	223.	221.
9. U.S., All Commodities, Prices Received-Average	264.	264.	259.	249.	247.	237.	225.	230.	223.	222.	226.	223.
10. Wyoming Livestock, Prices Received-Latest	247.	235.	254.	246.	252.	238.	238.	223.	237.	238.	258.	246.
11. Wyoming Livestock, Prices Received-Average	245.	243.	244.	247.	254.	250.	230.	236.	228.	244.	245.	253.
12. U.S. Livestock, Prices Received-Latest	264.	251.	247.	253.	[illegible]	235.	222.	243.	230.	230.	257.	248.
13. U.S. Livestock, Prices Received-Average	264.	256.	251.	249.	251.	236.	227.	240.	232.	228.	255.	252.
14. Prices Paid by U.S. Farmers-Average	333.	336.	334.	332.	332.	332.	329.	329.	330.	324.[3]	326.	324.

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[1] First time readers of WQU should refer to the "Format" page (in back) for an explanation of abbreviations and table formats.
[2] The index for the last month (latest) of each quarter, along with the average of the three monthly indices of each quarter.
[3] This figure is for the month of April. This index is now reported in the months of January, April, July, and October.

Sources: Series 1: United States Forest Service. "Timber Cut and Sold, Convertible Products." Region 2 and 4 reports published quarterly.
Series 2-15; Wyoming Crop and Livestock Reporting Service. Bi-weekly Ag Statistics.

Table 6: Banking and Finance

Calendar Quarters	1/84	2/84	3/84	4/84	1/85	2/85	3/85	4/85	1/86	2/86	3/86	4/86
1. Total Bank Loans and Leases Financing Receivables (T$)[1]	2313197.	2359492.	2368731.	2352704.	2356267.	2348277.	2296857.	2226477.	2173437.	2108551.	2066324.	INA
2. Total Bank Deposits (T$)	3747828.	3812354.	3790977.	4005456.	3808654.	3908435.	3959810.	4048702.	3908134.	3797038.	3787785.	INA
3. Total Non Interest-Bearing Deposits (T$)[1]	657189.	734297.	723344.	742392.	652223.	643908.	687128.	689811.	624421.	620064.	611410.	INA
4. Savings and Loan Mortgage Loans (T$)[2]	767125.	775396.	771560.	806660.	780644.	806897.	949722.	929668.	826697.	817750.	777162.	INA
5. Savings and Loan Deposits (T$)[2]	1051271.	1087036.	1111213.	1142593.	1161848.	1193339.	1183564.	1166220.	1139851.	1137374.	1071098.	1148457.
6. Prime Interest Rate[3]	11.21	12.60	12.97	11.06	10.50	9.78	9.50	9.50	9.10	8.50	7.50	7.50*

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[1] During the first quarter of 1984, the Wyoming State Bank Examiner began publishing it's quarterly report ("The Abstract Report of State and National Banks in Wyoming") in a slightly different format. IPR will therefore be altering the following banking and finance data series: total bank loans and total demand deposits. Beginning in the first quarter of 1984, data for total bank loans will include lease financing receivables; data for total bank demand deposits will be replaced by figures for noninterest-bearing deposits. For comparison, the reader can refer to past issues of the WQU.

[2] Only members of the Federal Home Loan Bank Board are included. Indicates amount at the end of the quarter.

[3] Rate is for the last month of the quarter.

Sources:		
	Series 1-3:	Wyoming State Bank Examiner Quarterly Report.
	Series 4 and 5:	Federal Home Loan Bank of Seattle, Monthly Report. Comparative statistical analysis of member institutions.
	Series 6:	U.S. Department of Commerce, Bureau of Economic Analysis. Survey of Current Business. Published Monthly.

*This rate is for October.

Table 7: Business Conditions

Calendar Quarters	1/84	2/84	3/84	4/84	1/85	2/85	3/85	4/85	1/86	2/86	3/86	4/86
1. New Domestic Corporations	359.	359.	332.	273.	308.	307.	248.	283.	308.	301.	262.	307.
2. New Foreign Corporations	260.	249.	259.	244.	224.	259.	279.	217.	251.	223.	189.	217.
3. Total New Corporations	619.	608.	591.	517.	532.	566.	527.	500.	559.	524.	451.	524.
4. Business Failures	59.	64.	67.	68.	70.	78.	58.	72.	74.	83.	89.	64.
5. Value of Business Failures ($)	17789116.	14081414.	11774068.	12763251.	-25485776.[1]	23761569.	-2394988.[1]	8266910.	-933393.[1]	-2898465.	7242872.	12405831.
6. Personal Bankruptcies	180.	166.	169.	183.	176.	204.	229.	211.	238.	321.	308.	340.

[1] Assets exceed liabilities.

Sources: Series 1-3: Secretary of State. New and Foreign Corporations. Monthly report.
Series 4-6: Cheyenne Credit Bureau. Wyoming bankruptcy cases, business failures, and value of failures. Weekly publication.

Table 8: Construction

Calendar Quarters	1/84	2/84	3/84	4/84	1/85	2/85	3/85	4/85	1/86	2/86	3/86	4/86
1. New Residential Dwelling Units	481.	935.	642.	368.	380.	670.	628.	535.	389.	394.	508.	317.
2. Value of Residential Dwellings Constructed (M$)	28.4	54.4	37.9	23.0	24.3	46.8	42.3	35.4	20.9	24.8	33.7	21.6
3. Value of Nonresidential Construction (M$)	11.5	30.6	36.9	80.0	33.0	75.8	32.1	17.1	14.2	33.8	50.3	9.2
4. Building Permits Issued in Selected Wyoming Cities	2025.	3892.	3546.	2438.	1713.	3315.	3753.	2872.	2547.	3979.	2698.	2112.
5. Value of Authorized Construction (T$)	29471.	42320.	36344.	35282.	23474.	83920.	193451.	15695.	21484.	49454.	38669.	20453.
6. Mortgage Interest Rate[1]	11.56	11.61	12.03	12.05	11.42	11.31	10.69	10.47	10.01	9.74	9.74	9.58*

[1] Conventional first mortgage for new home purchase. U.S. average for last month of quarter.

Sources: Series 1-3: F.W. Dodge Division of McGraw-Hill. "Dodge Local Construction Potentials." Published monthly.
Series 4-5: Institute for Policy Research. "Local Construction Reports." Survey of authorized construction in selected cities conducted monthly.
Series 6: U.S. Department of Commerce, Bureau of Economic Analysis. Survey of Current Business. Published monthly.

*This data is the U.S. average for October.

Table 9: Consumers

Calendar Quarters	1/84	2/84	3/84	4/84	1/85	2/85	3/85	4/85	1/86	2/86	3/86	4/86
1. New Truck Registrations	3927.	4418.	4102.	4574.	3581.	4052.	5187.	3915.	3343.	3650.	3951.	INA
2. New Car Registrations	3083.	3741.	3676.	3397.	3012.	3752.	4868.	3177.	3200.	3804.	4181.	INA
3. Wyoming Personal Income[1] (M$)	6089.	6240.	6332.	6373.	6419.	6623.	6639.	6704.	6894.	7075.	INA	INA
4. US Disposable Income (B$)	2502.	2554.	2606.	2724.	2739.	2818.	2800.	2846.	2935.	2979.	2980.	2994.
5. US Personal Income[1] (M$)	2918793.	2985650.	3053166.	3107659.	3156982.	3193455.	3207892.	3268061.	3304609.	3483333.	3501667.	3524300.
6. Latest US Consumer[2] Price Index (1967=100)	303.3	306.2	312.1	312.2	315.3	318.7	320.5	323.4	321.4	323.0	324.9	325.0[3]
7. Quarter's Average US CPI	303.1	305.2	310.0	312.1	313.9	317.7	319.7	322.4	323.0	321.6	327.1	325.2[4]
8. Liquor Sales (T$)	6622.	7478.	8180.	9554.	6360.	7538.	8931.	9526.	6293.	7500.	8334.	8811.

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[1] Revised series. Business Week, the previous source for monthly personal income for Wyoming and the U.S., has discontinued its series. Personal income data will subsequently be collected from the Bureau of Economic Analysis, U.S. Department of Commerce. Readers should be cautioned that the two series are not comparable.

[2] Number shown is for the last month of the quarter. CPI shown is the index for wage earners and clerical workers, not the CPI-U. Beginning with the data for January, 1985, the index is affected by a change in methodology used to compute the homeownership component.

[3] This figure is for the month of October.

[4] This is the average of October and November.

Sources: Series 1-2: R.L. Polk and Company Motor Statistical Division. "National New Vehicle Registration Service." Published monthly.
Series 3,5: U.S. Department of Commerce, Bureau of Economic Analysis. Survey of Current Business. Published quarterly.
Series 4,6,7: U.S. Department of Commerce, Bureau of Economic Analysis. Survey of Current Business. Published monthly.
Series 8: Wyoming Liquor Commission. Sales data are reported to IPR.

Table 10: Employment and Labor[1]

Calendar Quarters	1/84	2/84	3/84	4/84	1/85	2/85	3/85	4/85	1/86	2/86	3/86	4/86
1. Civilian Labor Force	246802.	258507.	261039.	249652.	242092.	256819.	266519.	246570.	248020.	257190.	257544.	247012.
2. Employment	226897.	240970.	247678.	236455.	223081.	238436.	250115.	228368.	222222.	231996.	236062.	226843.
3. Unemployment	19905.	17537.	13360.	13197.	19011.	18383.	16403.	18203.	25798.	25194.	21518.	20169.
4. Unemployment Rate	8.1	6.8	5.1	5.3	7.9	7.2	6.2	7.4	10.4	9.8	8.4	8.1
5. Initial Claims Filed	10502.	7271.	5255.	8237.	13108.	8047.	6991.	12467.	15095.	13146.	11710.	13845.
6. Applications Received	10290.	11541.	11375.	9685.	11106.	12017.	11424.	11347.	14321.	14968.	13057.	8849.
7. New Non-Agricultural Openings	4679.	9779.	12905.	8655.	7004.	11450.	12640.	9685.	7059.	10595.	10997.	7068.
8. New Non-Agricultural Placements	5946.	9111.	10348.	8331.	6308.	9597.	9656.	9163.	6348.	8490.	3367.	INA
9. Miners' Average Weekly Hours	42.8	43.2	42.9	43.5	41.4	43.9	43.3	44.5	43.7	41.9	41.6	43.4
10. Miners' Average Weekly Pay ($)	547.39	556.70	552.01	572.47	570.76	591.61	574.69	600.17	601.10	520.39	541.10	644.49
11. Miners' Average Hourly Wage ($)	12.78	12.94	12.87	13.16	13.79	13.47	13.27	13.50	13.76	12.42	13.00	14.85

[1] The most recent year's data are preliminary.

Sources: Series 1-11: Wyoming Employment Security Commission. Labor Force Trends. Published monthly.

Table 11: Energy and Mineral Production

Calendar Quarters	1/84	2/84	3/84	4/84	1/85	2/85	3/85	4/85	1/86	2/86	3/86	4/86
1. Wyoming Coal (TST)	32020.	28964.	31806.	34908.	36243.	31854.	32228.	30508.	33671.	29421.	32685.	35979.
2. U.S. Coal (TST)	227129.	223657.	246163.	188471.	220652.	220673.	225484.	211487.	224966.	214567.	216695.	223892.
3. Wyoming Oil (TBPD)	311.	325.	350.	338.	333.	332.	337.	334.	335.	334.	334.	333.
4. U.S. Oil (TBPD)	8737.	8831.	8879.	8942.	8877.	8910.	8901	8895.	8877.	8851.	8725.	8585.
5. Wyoming Natural Gas (MCFD)	1588.	1376.	1285.	1417.	1601.	1297.	1201.	1348.	1242.	1372.	1293.	INA
6. U.S. Natural Gas (MCFD)	52912.	49076.	47968.	49888.	51347.	45317.	44400.	47203.	49266.	INA	INA	INA
7. Active Rig Counts in Wyoming-Average[1]	121.	93.	116.	128.	99.	81.	95.	96.	57.	25.	22.	38.

[1] Due to numerous requests, we will begin reporting the active rig counts in Wyoming for the quarter. Monthly data back to January, 1974 is available from our data base upon request.

Sources: Series 1,2,5, and 6: U.S. Department of Energy. Energy Data Reports. Gas data are from Natural Gas Monthly, and the Wyoming Oil & Gas Conservation Commission. Coal data are published weekly.
Series 3-4: The Oil and Gas Journal. U.S. and Wyoming Oil Production published weekly.
Series 7: Petroleum Information Corporation, Hughes Tool Company. Monthly Average Active Rig Counts in Wyoming.

Table 12: Government

Calendar Quarters	1/84	2/84	3/84	4/84	1/85	2/85	3/85	4/85	1/86	2/86	3/86	4/86
1. Sales and Use Tax Collections (T$)	55954.	51151.	57132.	59570.	54966.	50917.	63025.	65957.	53816.	47695.	55716.	48973.
2. Violent Crime[1]	221.	318.	350.	334.	304.	275.	350.	319.	292.	380.	372.	INA
3. Nonviolent Crime[2]	3728.	4486.	4790.	4170.	4170.	4969.	5120.	4212.	4294.	5485.	5265.	INA
4. Stolen Property (T$)	2065.	2627.	2856.	2487.	2244.	2437.	3443.	2447.	2529.	3713.	2420.	INA
5. Stolen Property Recovery Rate	42.7	42.9	51.5	45.5	51.9	38.5	51.6	41.0	34.2	54.0	38.6	INA
6. Percent of Crimes Cleared[3]	30.9	22.4	22.9	30.7	28.3	24.0	25.1	28.9	28.2	24.7	25.2	INA

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[1] Murder, negligent homicide, forcible rape, robbery, aggravated assault.

[2] Burglary, larceny, auto theft.

[3] Clearance of a crime indicates resolution of a complaint by arrest or other extraordinary means.

Sources: Series 1: Wyoming Department of Revenue and Taxation, Sales and Use Tax Division. "Net Collections by Business Class by County." Published monthly.

Series 2-6: Uniform Crime Reporting Center for Criminal Justice Research, Division of Criminal Identification, Office of the State Attorney General. "Crime in Wyoming." Published quarterly.

Table 13: Tourism

Calendar Quarters	1/84	2/84	3/84	4/84	1/85	2/85	3/85	4/85	1/86	2/86	3/86	4/86
Visitors, National Parks and Monuments												
1. Yellowstone	63927.	536765.	1561475.	100802.	66776.	592059.	1500133.	103487.	79077.	607923.	1593749.	124314.
2. Grand Teton	136459.	522640.	1373523.	206891.	130583.	517614.	1299635.	181840.	138794.	530991.	1314373.	196051.
3. Devil's Tower	9037.	72461.	131447.	15145.	8841.	68885.	135061.	12157.	9237.	86167.	186134.	16610.
4. Fossil Butte	246.	4246.	9107.	1762.	115.	4254.	10434.	1213.	205.	4367.	10105.	1152.
5. Fort Laramie	2352.	27529.	54704.	5527.	2625.	26185.	49165.	3921.	2027.	28120.	52465.	3151.
6. Big Horn NRA-South[1]	18715.	45104.	67403.	26388.	31533.	56612.	77495.	46073.	18574.	53634.	65696.	40878.
Other Tourism Indicators												
7. Traffic Count (Avg. # of Vehicles/Day)	85780.	125371.	169579.	101625.	88135.	131520.	166903.	98463.	90397.	119613.	147829.	91685.
8. Hotel, Motel, and Camp Sales Tax (T$)	979.	1084.	2178.	1389.	932.	1070.	2136.	1370.	862.	1185.	2205.	INA
9. Gasoline Sales (TGL)	63980.	85891.	102748.	77108.	66798.	83529.	101676.	74304.	62891.	76603.	95902.	INA

[1] Big Horn Canyon N.R.A. is only partially in Wyoming. Only visitation for the Wyoming part is shown.

Sources: Series 1-6: Monthly visitor use reports of the National Park Service.
Series 7: Traffic Survey Unit - Planning Branch, Wyoming State Highway Department. "Selected Recording Stations Traffic Counter Data." Published monthly.
Series 8: Wyoming Department of Revenue and Taxation. "Sales and Use Tax Summary by County by SIC Major and Minor." Reported monthly.
Series 9: Petroleum Association of Wyoming. Monthly Gasoline Gallonage Report.

Table 14: Utilities[1]

Calendar Quarters	1/84	2/84	3/84	4/84	1/85	2/85	3/85	4/85	1/86	2/86	3/86	4/86
1. Residential Electric Connections	179967.	179536.	178837.	179123.	179451.	181034.	179423.	179609.	179931.	179179.	177718.	177613.
2. Residential Electric Consumption (TKWH)	562483.	437086.	359496.	484523.	542962.	395900.	348469.	510291.	502703.	342033.	300186.	512614.
3. Commercial Electric Connections	32340.	32462.	32874.	32738.	33058.	33730.	33782.	33603.	33606.	33885.	33786.	33880.
4. Commercial Electric Consumption (TKWH)	485953.	437983.	455181.	468378.	504376.	474481.	497271.	512748.	499198.	425035.	418211.	454301.
5. Industrial Electric Connections	3119.	3150.	3122.	3059.	2957.	2926.	2933.	2872.	2927.	2811.	2884.	2655.
6. Industrial Electric Consumption (TKWH)	1456749.	1911229.	2049121.	2479998.	1572877.	1904448.	2159299.	2626516.	1514740.	1313271.	1452583.	4523224.
7. Other Connections[2]	2759.	3155.	3438.	3165.	2916.	3145.	3219.	3112.	3451.	3285.	3317.	3030.
8. Other Consumption (TKWH)	6129.	13775.	50031.	10385.	5321.	19238.	57385.	10970.	11110.	41061.	66445.	104054.
9. Residential Natural Gas Connections	76263.	75081.	74802.	75736.	76112.	75456.	74772.	75826.	76146.	75383.	74548.	75188.
*10. Residential Natural Gas Consumption (MCF)	15230399.	8356402.	2804867.	9293855.	14912809.	6892581.	2723293.	9855048.	12757931.	6847671.	980204.	2601063.
11. Commercial Natural Gas Connections[3]	6881.	6817.	6770.	6859.	6882.	6785.	6651.	6737.	10926.	6651.	6545.	6626.
*12. Commercial Natural Gas Consumption (MCF)[3]	9496853.	5231096.	1656779.	5481602.	9319095.	4495896.	1640628.	5816481.	8227469.	5366969.	1611491.	1092123.
13. Industrial Natural Gas Connections	94.	95.	96.	93.	91.	92.	96.	93.	91.	91.	91.	95.
*14. Industrial Natural Gas Consumption (MCF)	13193998.	25099377.	12505089.	26405131.	9633325.	12378588.	6370238.	9827421.	10188011.	5077804.	1840335.	1755402.
15. Other Natural Gas Connections[3]	45.	46.	46.	46.	46.	47.	42.	42.	42.	40.	38.	37.
*16. Other Natural Gas Consumption (MCF)[3]	235.	905.	5882.	336.	138.	1739.	8033.	176.	149.	1095.	5470.	102.

---

[1] Some small utilities do not report, hence the data are slightly less than actual state totals. The data are consistent. The same utilities' reports are included in each figure.

[2] "Other" includes agriculture, municipal, and other public.

[3] Figures for the first and second quarter of 1983 reflect a change in the authority connections/consumption made by the Northern Utilities. Prior to January 1983, the company listed public authority under the category of other natural gas connections/consumption. Northern Gas now combines public authority connections/consumption with their commercial natural gas connections/consumption.

NOTE: Due to divestiture, Mountain Bell is no longer able to provide IPR with the telephones in service figure; because Mountain Bell accounts for the bulk of telephone mainline service in Wyoming, IPR has decided to discontinue the telephone data series.

Sources: Series 1-18: Reports to IPR by selected electric and natural gas utility companies. Survey conducted monthly.

*Due to inconsistencies in gas consumption reporting, applicable series will be audited and revised in the next update.

Average Rents by City, Third Quarter 1986*

City	Apartment	Trailer Lot	House	Mobile Home
Cheyenne	$318.62	$132.00	$430.75	$289.85
Buffalo	247.50	106.25	314.55	265.63
Casper	267.98	146.47	368.89	277.73
Cody	284.76	130.00	416.14	256.05
Douglas	324.29	120.00	333.33	266.67
Evanston	336.94	188.00	436.02	381.05
Gillette	309.66	175.00	499.53	303.38
Greybull	253.57	76.50	242.37	216.43
Jackson	372.33	116.67	473.10	253.13
Kemmerer	379.17	135.00	370.45	374.09
Laramie	324.99	128.83	395.67	271.32
Lusk	241.67	90.00	265.00	283.36
Newcastle	279.93	81.67	287.50	255.83
Pinedale	360.71	150.00	383.93	331.67
Rawlins	246.00	122.50	318.95	207.50
Riverton	247.81	113.75	298.19	165.68
Rock Springs	342.24	160.25	499.89	337.15
Sheridan	266.37	130.00	325.08	258.33
Sundance	243.57	80.00	320.00	203.38
Thermopolis	272.50	130.00	291.47	262.50
Torrington	249.44	57.50	293.18	207.22
Wheatland	263.33	100.00	355.00	233.73
Worland	290.36	100.00	342.92	264.58

*Prepared by Research and Statistics, Department of Administration and Fiscal Control.

Wyoming Comparative Cost of Living Index* (October 1-3, 1986): Statewide Average = 100

City	Rank	All Items	Food	Housing	Transportation	Medical
Jackson	1	111.90	99.69	127.18	103.18	99.91
Rock Springs	2	108.00	99.29	121.09	99.45	96.99
Evanston	3	107.35	94.96	118.18	107.45	100.70
Gillette	4	107.04	101.13	117.96	100.31	105.92
Pinedale	5	106.59	104.34	111.56	102.18	104.56
Sundance	6	104.01	98.72	110.28	100.20	107.04
Kemmerer	7	103.54	100.10	109.93	99.78	98.97
Cheyenne	8	103.01	99.68	107.97	101.71	98.78
Cody	9	100.57	104.07	99.62	100.35	95.70
Casper	10	100.42	98.35	98.21	104.71	104.03
Laramie	11	100.09	101.54	101.21	98.69	96.85
Wheatland	12	99.98	101.68	99.60	100.08	99.13
Sheridan	13	99.91	105.52	96.31	99.43	105.43
Douglas	14	98.61	101.70	94.15	99.74	103.28
Worland	15	97.75	100.57	95.30	99.02	100.53
Buffalo	16	96.11	100.86	90.48	97.62	94.66
Newcastle	17	95.96	102.34	89.07	95.81	103.45
Rawlins	18	95.78	98.31	90.20	99.65	103.00
Thermopolis	19	95.76	100.51	90.60	97.34	93.14
Lander	20	94.40	101.24	89.28	95.62	100.60
Greybull	21	94.29	97.92	85.29	100.84	96.25
Lusk	22	93.99	102.21	83.92	99.05	97.50
Riverton	23	92.69	94.05	84.75	102.52	99.58
Torrington	24	92.25	91.24	87.86	95.30	94.00

*Apparel and Recreation indices not shown.

Source: Wyoming Department of Administration and Fiscal Control.

Format

For data available at least quarterly, the last 12 quarters are printed in WQU. In this edition, published series begin with the 4th quarter of 1983, and end with the 4th quarter of 1986. For other data series (primarily annual), the most recent observations, up to 12, are published in WQU. Most annual data series will reappear in WQU only when updated, or about every fourth issue. Quarters are calendar quarters. For example, the 3rd quarter is composed of July, August, and September. In the table headings and narratives, a particular quarter will be indicated by notation such as 2/82 (2nd quarter, 1982), 1/82 (1st quarter, 1982), and so on.

Beside each data series name is an abbreviation in parentheses. The abbreviation indicates the units (such as dollars, tons, feet, miles, etc.) of the data. The key to the units abbreviations is below.

Throughout WQU, all data are for the state unless otherwise stated. The most recent year's data should be viewed as preliminary, due to revisions. The acronymn "INA" signifies that information is not available.

The reader should be attentive to the footnotes at the bottom of pages, particularly those accompanying a data table. The footnotes help the reader to properly interpret the data, and they also indicate when more detailed (by subject or by area) data than that which is shown is available from IPR. A list of sources follows the footnotes.

Key to Units Abbreviations

MBF - Thousand Board Feet
TKWH - Thousand Kilowatt Hours
$ - Dollars
M$ - Millions of Dollars
B$ - Billions of Dollars
T$ - Thousands of Dollars
H$ - Hundreds of Dollars
ST - Short Tons
TST - Thousands of Short Tons
MCFD - Million Cubic Feet Per Day
TBPD - Thousands of Barrels Per Day

GL - Gallons
TCF - Thousands of Cubic Feet
KWH - Kilowatt Hours
TGL - Thousands of Gallons
HBBL - Hundreds of Barrels
HMCF - Hundreds of MCF Per Day
HST - Hundreds of Short Tons
$/ST - Dollars Per Short Ton

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CRIS is a cooperative service provided by the Institute for Policy Research, University of Wyoming, and the Research and Statistics Division, Wyoming Department of Administration and Fiscal Control.

We look forward to assisting you in the future.

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Institute for Policy Research
University of Wyoming

Phil Kiner
Research and Statistics Division
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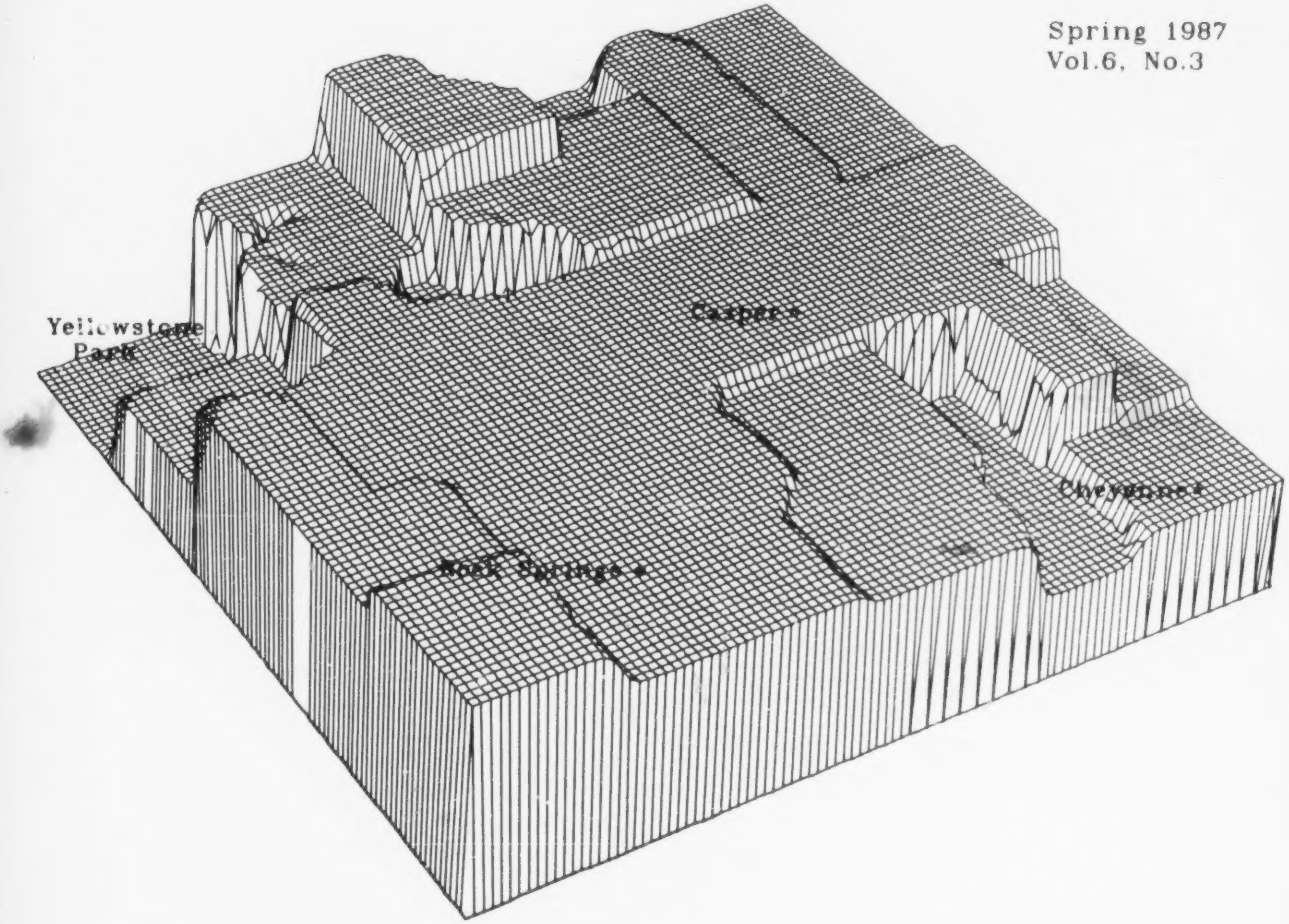
WYOMING QUARTERLY UPDATE

Spring 1987
Vol.6, No.3



IPR

March 1987 County Unemployment Rates

Wyoming Quarterly Update

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The cover of each edition features a contour map illustrating the geographic distribution of a particular variable. This edition presents a contour map depicting county unemployment rates for March 1987.

First-time readers of WQU should refer to the "format" explanations on page 48 for keys on how best to use and interpret data presented in this publication.

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FRONT MATTER

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WYOMING
SCENE

Overview and Perspective

The performance of the national economy during the first few months of 1987 remained generally sluggish. There was, however, some good news with respect to the nation's burgeoning trade deficit, which began to shrink as the dollar dropped against foreign currencies.

In March, the trade deficit shrank to $13.6 billion, down from $15.1 billion in February. At the same time, the U.S. dollar lost 15 percent of its value against the Japanese yen during the period from March 1986 to March 1987. While the falling dollar may over time help reduce the trade deficit, economists warned that there were negative effects as well. A weakened dollar would mean an acceleration of import prices and could prompt domestic price increases. The upward price pressure could also mean higher inflation and higher interest rates. During the first quarter of 1987, the U.S. import price index jumped 2.5 percent (excluding imported energy), or at an annualized rate of more than 10 percent. However, it did not appear that the rise in import prices was proportionate to the dollar's decline against other currencies. Between the first quarter of 1985 and the first quarter of 1987, import prices (excluding energy) rose 14.4 percent, while the dollar fell 40 percent in relation to the average currency value of the nation's 10 largest trading partners. In order to maintain market share, many foreign competitors have found it necessary to reduce profits. Some of the largest import price increases have occurred in transportation equipment and machinery, a good portion of which originates in Japan and West Germany where declines in the dollar have been the steepest.

While inflation may be higher in the months ahead, many economists feel it is unlikely to accelerate much beyond 5 percent on an annual basis. Interest rates are tracking upward, but probably not sharply enough to stifle new growth in the economy. Higher interest rates will be most acutely felt in such interest-sensitive sectors as housing and business investment. Rates on 30-year fixed rate mortgages rose from an average of 9.09 percent in March to 10.53 percent on May 15, according to a survey conducted by HSH Associates, a mortgage information firm.

The federal deficit also showed signs of shrinking. The Commerce Department announced that during the first six months of fiscal 1987, the deficit was $121.93 billion, down 10.6 percent when compared to the first half of 1986. For all of 1986, the budget deficit was $220.70 billion. For fiscal 1987, the budget deficit is predicted to range between $173 billion and $180 billion. In addition, the budget deficit during the second half could be lower than in the first half since the government's income tax receipts picked up in April.

Another bright spot was the nation's improving unemployment picture. In April, the civilian unemployment rate dropped to 6.3 percent, down from 6.6 percent in March. It was the lowest level since December 1979. During April, 316,000 new payroll jobs were added to the national economy, boosting total employment to 112 million workers.

Despite such positive signs, some economists continued to see underlying weakness in the economy. One reason runaway inflation is unlikely to be rekindled, they argue, is that the general economy is still too soft to support a substantial price surge. In April, U.S. factories operated at only 78.9 percent of capacity (down 0.4 percent from March and at their lowest levels since December 1983). Productivity did rise 1.7 percent at an annualized rate during the first quarter, but mostly because American workers realized smaller gains in hourly wages and benefits. The Labor Department announced that without adjustments for inflation, hourly labor costs rose only 0.1 percent during the first quarter, the smallest quarterly rise since the spring of 1949. According to the government's method of calculation, increased output without rising labor costs boosts productivity figures.

While the rise in productivity did offset declines suffered in the previous two quarters, man-hour output remained virtually unchanged from the first quarter of 1986. Moreover, productivity in manufacturing was disappointing, rising only 1.4 percent in the first quarter after posting no gains in the fourth quarter of 1986. Over the past four quarters, manufacturing productivity has risen only 2 percent, considerably below earlier comparable periods. Productivity declines during the first quarter were concentrated in hardgoods industries, which have been on a downhill slide since 1985.

At a time when income gains appear to be slowing, prices were picking up moderately. Consumer prices rose 0.4 percent in March, the same increase as in February. Food and energy prices registered modest increases, while other categories jumped more sharply. Apparel prices, for example, rose 1.7 percent in March, the largest increase in almost 13 years. If such trends continue, the result could be an erosion in purchasing power and consumer spending--engines of the last recovery.

Oil prices have risen significantly since crashing in 1986. By mid-May, the price of Saudi Arabian light hovered in the $17.50-per-barrel range, while the price of West Texas Intermediate was nearing the $20-per-barrel mark. Where prices would go from there, however, was a matter of speculation. Some analysts predicted a slow rise in prices throughout the rest of the decade, while others felt there was at least a chance prices could top $24 per barrel within the next year. The key ingredient is whether members of the OPEC cartel stick with their production quotas arrived at last December. Long-term price stability, and modest increases over time, would result if the production quotas hold. On the other hand, if member nations grow dissatisfied with the price and cut production even further, the price would rise. Radical members such as Iran, Libya, and Algeria favor even greater production cuts and higher prices. The uncertainty attendant to Middle East politics seems to allow for either possibility.

In Wyoming, the state bank examiner reported that assets in state and national banks dropped by nearly $200 million between the first quarter of 1986 and the first quarter of 1987. By March 31, 1987, $4.2 billion in assets were held in state banks, compared to $4.4 billion on March 31, 1986. During the same period, eight Wyoming banks closed their doors.

The outlook for state revenues was more hopeful. Although fiscal profiles showed the state could be facing a budget deficit of $591,000 by the end of the biennium, Legislative Service Office (LSO) officials said it was more likely the state would actually be $6 million in the black. It was expected that a large transfer to the General Fund of money held by the state auditor would offset the projected deficit.

S. T. Mast, IPR

# #

Spring Minerals Outlook

OVERVIEW

The first quarter of 1987 provided more than a few pleasant surprises. Posted crude oil prices went from $14.75 in December 1986 to $17.25 in March 1987, although the increases were not a smooth upward trend. While these prices will not really accelerate exploration activity, they are certainly an improvement over the lower prices in the last half of calendar year 1986. Natural gas (methane) production for 1986 was substantially higher than predicted at an estimated 565.5 billion cubic feet. In addition, an estimated 25 billion cubic feet of carbon dioxide were produced at Exxon's Shute Creek gas plant in Sweetwater County. Coal production was also slightly more than expected at 135.7 million tons (about 0.7 million tons above estimates).

The Wyoming State Legislature also provided some tax relief to both the oil and gas industries, as well as portions of the coal industry. In the case of oil and gas, bills passed that (1) lowered the severance tax rate on new wildcat wells drilled before 1990, (2) expanded the definition of stripper wells, (3) allowed a severance tax credit for companies using carbon dioxide produced in Wyoming, and (4) exempted certain unmarketed natural gas used at the wellhead or lease from severance tax assessments. A bill to provide a tax break to oil companies that employ and locate professional geologists, engineers, and others in Wyoming failed to pass.

In the case of coal, the legislature set a cap on the taxable value of a ton of coal for severance tax purposes. A bill to delete federal black lung and reclamation taxes before calculating the taxable value of coal for severance tax purposes was defeated.

Also of considerable interest to natural gas producers and the state is a jointly proposed pipeline project by Williams Natural Gas Pipeline Company and Tenneco, Inc. Their Kern River pipeline project is one of several proposals before the Federal Energy Regulatory Commission (FERC). FERC must select one of these competing proposals to supply natural gas to new markets in Kern County, California. Indications are that the California market could increase to 1.09 billion cubic feet per day by 1990.

If FERC selects the Kern River Project, the pipeline would start in southwestern Wyoming and then run diagonally southwestward to California. Wyoming fields would probably supply half of the initial 700 million cubic feet per day needed in California. A project of this size in southwest Wyoming would go a long way toward finding markets for excess gas supplies now available in that area, would create numerous jobs, would provide an incentive for Exxon to proceed with Phase II of its Shute Creek gas plant project, and would

Table 1: Wyoming Mineral Production Forecast to 1991[1].

Calendar Year	Oil Production[2]	Natural Gas Production[3,5]	Carbon Dioxide Production[3]	Coal Production[4]	Trona Production[4]	Uranium Production[4]
*1981	122.1	455.4	--	102.8	11.8	4.6
*1982	118.7	465.1	--	107.9	10.1	2.1
*1983	120.9	539.7	--	112.2	10.5	3.0
*1984	127.8	600.1	--	130.7	11.0	1.6
*1985	131.0	597.9	--	140.4	10.8	0.6
*1986				135.7		
1986	123.0	565.6	25.0		11.5	0.3
1987	115.5	605.0	75.0	149.0	11.7	0.3
1988	107.5	629.0	100.0	143.0	12.1	0.4
1989	100.0	664.0	100.0	146.0	12.1	0.5
1990	93.0	699.0	100.0	150.0	12.2	0.5
1991	86.5	730.0	100.0	151.0	12.5	0.6

*Actual values for comparison:

[1] Geological Survey of Wyoming, March 1987
[2] in millions of barrels
[3] in billions of cubic feet
[4] in millions of tons
[5] Production estimates for natural gas are the only ones changed since January 1987.

help prevent exacerbation of the balance of payments problem by eliminating the need for importing large volumes of gas from Mexico or Canada (a significant part of some alternative plans). In late March, Governor Sullivan presented Wyoming's support for the Kern River Project in a public hearing held in Salt Lake City.

Another item of interest to Wyoming was the U.S. Department of Energy's call for proposals for siting a huge "supercollider." This $4.4-billion project involves the construction of a nearly circular tunnel (52 miles in circumference) in which scientists will accelerate two beams of protons in opposite directions at near the speed of light, using 10,000 superconducting magnets installed in the tunnel. This research project is designed to answer many fundamental scientific questions. In Wyoming, a site has been proposed for the northern Red Desert Basin (about 40 miles north of Wamsutter). This site reportedly meets most, if not all, the geological criteria set forth in the Department of Energy's guidelines.

Gary B. Glass, State Geologist
Geological Survey of Wyoming

OIL AND GAS UPDATE

Since mid-December of 1986, the average posted price for Wyoming Sweet crude oil rose rapidly from $14.75 to $17.25. The price dropped back to $16.25 in the second half of February when there was some concern that OPEC might abandon its production-price agreement because some OPEC members were apparently cheating on their quotas. Luckily, OPEC weathered that crisis and posted prices for Wyoming Sweet crude returned to the $17.25 level. The second quarter is a critical period for the OPEC agreement because of the decreased demand for crude oil near the end of the winter heating season. If OPEC is able to keep its production down through this period, prices should stay near their current level or possibly increase somewhat for the rest of 1987. Although this is good news for the domestic oil and gas industry, $17 to $18 for a barrel of oil is not enough to stimulate high levels of exploration and development drilling in Wyoming or the rest of the United States.

Four bills designed to provide some tax relief for Wyoming's beleaguered oil and gas industry were passed by the 1987 legislature. The first bill subtracts the severance taxes paid by carbon dioxide producers from the severance taxes of oil producers using the carbon dioxide for tertiary recovery projects in Wyoming. In a second bill, unmarketed natural gas used at the wellhead or lease was exempted from severance taxes. A third bill reduces the severance tax paid on the first four years of oil and gas production from wildcat wells drilled before 1990. The severance tax rate for this production was reduced to 2 percent. A fourth bill redefined stripper wells so that more low-production wells would qualify for the 2 percent severance tax break associated with "stripper" production.

Although these tax relief bills will not cause a boom in drilling activity, their passage does show that Wyoming is willing to provide some incentives to increase production and to help preserve a viable domestic petroleum industry. Unfortunately, the Federal Government seems unwilling to make any new concessions to help domestic producers. A recent six-month study for the Reagan Administration, finished in mid-March, found the United States will be importing half of its oil by the 1990s, posing a clear risk for national security unless steps are taken to boost domestic production. Figures from the Department of Energy for 1986 show that the U.S. imported 33 percent more oil in 1986 than in 1985, an increase of over 1 million barrels per day. Figures for the first 2.5 months of 1987 show that the U.S. imported around 30 percent more oil than for the comparable period in 1986, while domestic production for the 2.5-month period dropped an average of 750,000 barrels per day.

Faced with overwhelming evidence that the U.S. has become increasingly dependent on unstable sources of foreign oil at the expense of domestic producers, Energy Secretary John Herrington has asked the White House to propose a major tax break for the oil industry in the form of a 27.5-percent annual depletion allowance for all oil-producing and gas-producing properties. However, as recently as two years ago, President Reagan called the depletion allowance a general production subsidy that does not provide an efficient incentive for resource production. He has also rejected the idea of an oil import fee. In addition, congressional delegates from populous oil-hungry states are unlikely to endorse any measure that will raise the price of oil for their constituents. Many of these same congressmen insist that curbing consumption rather than increasing domestic production is the way for our country to decrease its dependence on foreign oil. Opponents of this view insist that conservation measures are only effective during crisis situations such as the oil embargoes of the 1970s when oil was in short supply and when prices were rising dramatically. The bottom line is that the future of the Wyoming oil and gas industry is more dependent on the OPEC production agreement than on any energy policy in this country.

The U.S. Bureau of Land Management did announce that stripper wells could remain temporarily shut-in past an original one-year deadline without threatening lease forfeiture. The state will apparently follow the same guidelines to help prevent premature closure of stripper or other marginally-economic wells.

Preliminary production figures from the Wyoming Oil and Gas Conservation Commission show 1986 oil production at 121.3 million barrels. In past years, the final production figures have been greater than the preliminary figures due to late reporting of some production. Final production will probably be around 123 million barrels, which is still a decrease of 6.1 percent, or 8 million barrels, from 1985 production. Preliminary natural gas production is estimated at 590.6 billion cubic feet; however, about 25 billion cubic feet of that total is carbon dioxide production. Natural gas production (excluding CO_2) dropped to 565.6 billion cubic feet, a decrease of 32.3 billion cubic feet, or 5.4 percent below 1985 production.

The rig count averaged 23 for the first three months of 1987. It should increase somewhat in the coming months if prices remain fairly stable. Traditionally, the count is low during the first few months of the year and then increases in later months.

The proposed Kern River pipeline is one of three pipeline routes being considered by the Federal Energy Regulatory Commission and the California State Land Commission to provide 700 million cubic feet of natural gas per day to southern California for use in tertiary oil recovery projects and electrical generation. The Kern River line would originate near Opal, Wyoming. The line would carry at least 350 million cubic feet of gas per day from Wyoming. The other two pipelines that have been proposed would transport gas from Texas and the Southwest. If the Kern River proposal is chosen, Wyoming gas production would increase by nearly 130 billion cubic feet per year.

Lease sale revenues and average prices per acre sold have rebounded somewhat from the extreme lows experienced in late 1986. The Wyoming Board of Land Commissioners has held lease sales since the last issue of the Quarterly Update. The January sale drew high bids of $300,404 for 74 tracts covering 32,606 acres, an average of $9.21 per acre. American Oil and Gas, Las Vegas, made the high per-acre bid of $2,300 for a 40-acre tract in section 13, T.49W., R.70W. in Campbell County. The tract is on the south side of Moran Field, a Minnelusa oil producer. Bids for the two top tracts in this sale accounted for 66.5 percent of all generated revenue.

The Wyoming Board of Land Commissioners' March sale received high bids of $270,234 for 35,770 acres. Of the 200 tracts offered, only 83 received bids, with an average bid of $7.55 per acre. The high per-acre bid of $100 was made by Exxon for a 440-acre tract in the Overthrust Belt, section 28, T.15N., R.120W. The parcel is about one mile from Yellow Creek Field. Bids for the two top tracts generated 36.9 percent of the total revenue for this sale; 43 of the tracts received the minimum bid of $1 per acre.

The Bureau of Land Management's (BLM's) February sale drew high bids of $814,653 on 64 of the 78 tracts offered. The average bid was $52.43 per acre for the 15,537 acres sold. Powder River Basin leases accounted for the top seven per-acre bids, and Lario Oil and Gas made the sale's top bid of $1226.56 an acre for an 80-acre parcel in section 32, T.50N., R.69W. The lease is in the southwestern part of Brennan Field which produces oil from the Minnelusa Formation.

Luckey Ditch Field in Uinta County continues to expand. Sun Exploration and Production recovered 2.8 million cubic feet of gas and 311 barrels of oil during a 21-hour production test of the Dakota at the 5 Luckey Ditch Federal-C well in section 9, T.12N., R.114W. Sun is now drilling the 8 Luckey Ditch Federal-F in section 10, T.12N., R.114W. Diamond Shamrock tested its 33-3 Taylor Ranch Unit-Federal well in section 3, T.12N., R.114W. for 72 barrels of condensate and 1.26 million cubic feet of gas per day from the Dakota. Sun recently opened a natural gas processing plant in the field, with a capacity of 20 million cubic feet per day, to handle gas production from Luckey Ditch wells.

Thermal Exploration has confirmed its Dakota discovery in Lincoln Road Field with the completion of the 2-9 Lincoln Road well in section 9, T24N., R.111W. The well flowed 8.3 million cubic feet of gas and 387 barrels of condensate per day. Thermal's discovery well in section 10, T.24N., R.111W. flowed 6.99 million cubic feet of gas and 323 barrels of condensate per day. In section 15 of the same township, Thermal is waiting on a completion unit at its 2-15-A Lincoln Road well. Texaco is testing its 1 Govt-C.E. Brehm in section 3, T.24N., R.111W. and has staked two more Dakota tests in the area.

In an important test on the Owl Creek uplift, W.A. Moncrief Jr. has gauged a flow of 1 million cubic feet of gas per day at the 12-2 Steffin Hill II Unit well in section 12, T.39N., R.93W. The well was tested in an unstimulated Frontier interval at about 20,000 feet. Plans call for the well to be acid-treated before future tests are run.

McAdams, Roux, and Associates' Little Missouri Field in Crook County has added two new producing wells. The discovery well, the 1-5 Fowler in section 5, T.54N., R.67W., pumped 575 barrels of oil per day from an untreated Minnelusa interval. The discovery was confirmed with the completion of the west offset 3-5 Fowler also in section 5, T.54N., R.67W., which pumped 80 barrels of oil and 46 barrels of water per day from the Minnelusa. A northwest offset, the 1-32 Federal in section 32, T.55N., R.67W., was completed, pumping 256 barrels of oil per day from the Minnelusa. The company is drilling a fourth test and has staked locations for two more in the area.

In another important discovery in the Powder River Basin, Phillips Petroleum has projected an initial production rate of 229 barrels of oil per day based on a drillstem test of the Frontier at its discovery well, the Phillips 1 Nutcracker-A in section 8, T.38N., R.75W. Phillips has scheduled seven other wells to test the Frontier as well as the Muddy and Dakota near the indicated discovery.

Amoco Production plans to test the Darwin

Sandstone Member of the Amsden Formation by reentering a dry hole in Little Buffalo Basin Field in the Bighorn Basin. The well is in section 12, T.47N., R.100W. There is no production from the Darwin in the area.

A Tulsa, Oklahoma, firm was awarded the contract for Phase II construction of a carbon dioxide processing and injection facility near Bairoil. An Amoco spokesman said the project will require a peak work force of 160 and should be completed by late summer. Phase I was completed last fall and included the construction of injection and pressurization facilities and construction of a 19-mile-long pipeline spur. Some carbon dioxide from Exxon's Shute Creek plant has already been injected into Wertz Field. The Phase II construction work will be for facilities to recycle the carbon dioxide that is produced with the oil.

Under a bill introduced in the U.S. House of Representatives, oil shale claims on 56,000 acres of federal land in Lincoln County, Wyoming, would be vacated or converted into federal mineral leases for oil shale only. The legislation was prompted by a federal court decision that allowed the sale of 82,000 acres of federal land in Colorado at $2.50 per acre. Representative Rahall of West Virginia said present claims are preventing other mineral development and are being held for speculation, not for development.

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Geological Survey of Wyoming

COAL UPDATE

Final 1986 coal production figures for Wyoming show that the state produced about 135.7 million short tons of coal. This ranks the state second in the nation in coal production for the second year in a row. Kentucky continued to lead the nation in coal production with over 160 million short tons produced in 1986, while West Virginia remained third with almost 130 million tons. Total U.S. coal production of 888.2 million short tons in 1986 was up about 0.5 percent from 1985's 883.6 million tons. Wyoming coal producers accounted for about 15 percent of the nation's total in 1986, down slightly from the state's 16-percent share in 1985.

The production decrease in Wyoming in 1986 is the first decrease in coal production recorded in the state in 18 years. The 1986 production is a decrease of 3.6 percent, or 5.0 million tons, from 1985's recordbreaking production of 140.7 millions. Despite the decreased production overall, 10 of the state's coal mines did show production gains in 1986. The largest increases occurred at the state's two newest coal mines, Antelope Coal Company's Antelope Mine and Rochelle Coal Company's Rochelle Mine. Both these mines are located in the southern part of the "Gillette strip" in the eastern Powder River Basin, and 1986 was the first full year of production for each mine.

Although Powder River Basin coal production was about 2 percent less in 1986, the basin still increased its share of the state's production from 85.3 percent in 1985 to 86.3 percent in 1986. In this coal basin, Campbell County production decreased by about 2.6 percent in 1986. Sheridan County experienced a much larger decrease (43 percent), due to a million ton production drop at the county's primary mine, Big Horn Coal Company's Big Horn Mine north of Sheridan. Converse County production increased about 1.2 million tons in 1986 as the Antelope Mine came on line. Production from the Antelope Mine more than offset a 0.5 million ton decrease at Glenrock Coal Company's mine north of Glenrock. This mine, which is captive to Pacific Power and Light Company's (PP&L) nearby Dave Johnston power plant, was forced to cut production (and to permanently lay off 100 coal mining personnel) in response to a decrease in power generation at the Dave Johnston plant. It was announced in late March 1987 that full electrical output from Dave Johnston, as well as the Wyodak coal-fired plant east of Gillette, would be restored. A decision on whether or not to rehire the 100 coal miners at Glenrock was still pending.

Eight of the top 10 coal-producing mines in the state were located in Campbell County in 1986; six of these mines produced in excess of 10 million tons of coal each, and Thunder Basin Coal Company's Black Thunder Mine produced over 20 million tons. The Black Thunder Mine has been the state's and the nation's leading coal-producing mine since 1982. Carter Mining Company's Rawhide Mine took over second place in state coal production, followed by Amax Coal Company's Eagle Butte Mine and Kerr-McGee Coal Corporation's Jacobs Ranch Mine. Cordero Mining Company's Cordero Mine was the state's fifth leading coal producer and Amax Coal Company's Belle Ayr Mine, usually the second or third largest mine in the state, dropped to sixth place in 1986. Four of these top six coal mines recorded decreased coal production that ranged from 1.0 million to 1.7 million tons less than 1985; two of these top six mines, the Cordero Mine and the Rawhide Mine, reported increased production. Other mines in the Powder River Basin reporting significant production decreases in 1986 included Carter Mining Company's Caballo Mine (down 1.7 million tons), Thunder Basin Coal Company's Coal Creek Mine (down 1.5 million tons), and Wyodak Resource Development Corporation's Wyodak Mine (down 0.6 million tons).

Coal production from the Hanna Basin (Carbon County) in 1986 was about 54 percent below that of 1985 and is now at its lowest level since 1969. Although four coal mines in this basin did report coal production in 1986, only the Seminoe No. 2 and the Rosebud Mine were actively mining coal at the end of the year. The state's only major underground mine, the Carbon County No. 1, produced only a small amount of coal in early 1986, as did the Medicine Bow Mine. Mines in this basin once accounted for nearly half the state's coal production (in 1973) but now only account for about 1 percent of the total.

Four mines in the Green River Basin (Sweetwater County) accounted for almost 10 percent of the state's total coal production in 1986. Overall production for this basin was down slightly from 1986 production. Coal production at Black Butte Coal Company's mine increased by about 0.5 million tons, while Bridger Coal Company's Jim Bridger Mine reported a 0.7 million ton decrease in production. The two mines mentioned above were the eighth and ninth largest mines in the state in 1986.

In the Hams Fork Region (Lincoln County), two mines reported a decrease in production in 1986; the region accounted for about 3 percent of the state's production for that year. Northwestern Resource Company's Grass Creek Mine in the Bighorn Basin remained the only active coal mine in northwestern Wyoming.

Employment in the state's coal mines also decreased in 1986. The 703 fewer employees in 1986 is a decrease of about 13 percent from 1985 and is the highest rate and amount of decrease recorded since the state's coal mine employment began to drop in 1981. Only seven coal mines in the state reported increased in employment in 1986; two of these seven mines were the newest Powder River Basin mines, the Rochelle and Antelope mines. Although employment in the state's coal mines is at its lowest level since 1978, the amount of coal each employee accounts for has risen from 26,108 tons/miner in 1985 to 29,045 tons/miner in 1986.

The most significant employment decreases in 1986 occurred in the Hanna and Powder River basins. The closure of the Carbon County No. 1 Mine in the Hanna Basin resulted in the loss of 257 jobs and contributed greatly to the loss of half the coal mining jobs in Carbon County. The employment situation in the Hanna Basin worsened with the announcement that 15 hourly employees at Rosebud Coal Sales Company's Rosebud Mine would be laid off in early January 1987. The Powder River Basin experienced the loss of 403 jobs in 1986. The greatest losses in this basin occurred in Campbell County where 223 jobs, including 117 at the Black Thunder Mine, were lost. Big Horn Coal Company in Sheridan County reported 78 fewer employees in 1986 and Glenrock Coal Company reported 109 fewer employees at the Dave Johnston Mine in Converse County. In a related development, PP&L announced in February that 12 positions at the Dave Johnston Power Plant were being eliminated in a cost-cutting measure.

The outlook for coal production in the state still remains optimistic. Coal production for 1987 is expected to increase a modest 3 percent above the 1986 level. This increase in production will probably follow the expected national increase in coal production of 3 percent. Increases in the state's coal production in years beyond 1987 are expected to follow the national increases in demand for electrical power. Many experts believe that additional electrical generating capacity needed in 1987 will be met, as it was in 1986, primarily by the opening of new nuclear generating plants (under construction in the early 1980s). By 1988, most of the planned new nuclear generating capacity will have been placed on line and new coal-fired generating plants will have to provide the majority of the needed additional generating capacity for that year, as well as for future years.

Monthly coal deliveries for the last quarter of 1986 were somewhat larger than expected earlier. Although cumulative deliveries lagged about 5 million tons behind 1985 deliveries throughout most of the year, monthly deliveries in November and December were higher than 1985 deliveries for the same months. In fact, December 1986, deliveries reached the highest monthly level yet reported, over 13 million tons. As a result, total delivered tonnage for 1986 was only 2.5 million tons less than 1985's tonnage. However, the total tonnage produced in 1986 was still about 5 million tons less than that produced in 1985 because unreported coal deliveries for 1986 were much less than those for 1985. The increased coal deliveries in November and December can be attributed, in part, to a resurgence of spot market sales. In June and July 1986, spot sales accounted for only 2.5 and 1.8 percent of the total deliveries, respectively; by December 1986, spot sales accounted for 9.1 percent of the total deliveries. About 4 percent of the total coal delivered in 1985 (or 5.8 million tons) was sold on the spot market. In 1986, spot coal sales accounted for 5 percent of the total coal deliveries.

In coal transportation developments, competition between the Burlington Northern Railroad (BN) and the Chicago North Western Transportation Company (C&NW)/Union Pacific Railroad (UP) joint venture for Powder River Basin coal haulage contracts continued in the first quarter of 1987. It was announced in January that the C&NW/UP joint venture railroad had signed two contracts with Oklahoma Gas and Electric (OG&E) that will replace expiring transportation contracts that the utility has with BN. In February, the Lower Colorado River Authority (LCRA) announced that BN had recaptured a transportation contract that the utility had awarded to C&NW/UP a year ago. Also, the UP announced in February that it would be participating with BN in the transportation of Wyoming coal to a Public Service Company of Oklahoma (PSO) power plant.

The first contract with OG&E is a seven-year contract that calls for C&NW/UP to initially haul 2 million tons of coal per year, escalating to 4 million tons per year, from the Black Thunder Mine to the Muskogee, Oklahoma, power plant. The second contract with OG&E calls for transportation of 2.5 million to 3.0 million tons of coal per year from the Black

Thunder Mine to the utility's Sooner Power Plant near Red Rock, Oklahoma. This contract also includes participation by the Atchinson, Topeka, and Santa Fe Railroad (AT&SF). BN's existing contract with OG&E for deliveries to the Sooner plant is due to end in 1988, but OG&E will accept only the minimum volume of 1.5 million tons per year from BN from now until 1988 (plus additional contract termination money). OG&E expects to save a total of $274 million in coal transportation charges through 1993 with these two new contracts.

The new transportation contract between BN and LCRA is a one-year pact that calls for hauling in excess of 4 million tons of coal from Thunder Basin Coal Company's Black Thunder Mine (and any other mines that may ship spot coal to the utility) to the Fayette Power Project in Austin, Texas. LCRA expects to save from $8 million to $12.5 million in transportation charges with the new contract.

The agreement between UP, BN, and PSO calls for BN to haul southern Powder River Basin coal to Kansas City, and for UP to haul the coal from Kansas City to PSO's Northeastern Power Station at Oologah, Oklahoma. Before this agreement was reached, PSO had planned to build a new spur line from its power plant to the BN tracks at Kansas City. This new contract started immediately and is expected to reduce transportation costs for the utility and its customers.

In coal contract news, several new coal supply contracts and several renegotiated contracts were signed in the first quarter of 1987. It was mentioned in a previously published Quarterly Update that Nerco, Inc. had signed a tentative contract with Northern States Power (NSP). In January, NSP announced that this contract called for deliveries of up to 2.5 million tons of coal per year for 15 years from Nerco's Antelope Mine in northern Converse County to NSP's electric generating plants in Minnesota and surrounding states. NSP expects to reduce some of the coal deliveries contracted from Montana coal mines and use more Wyoming coal in its place. The utility expects to bring new coal-fired generating capacity on line this year.

Rochelle Coal Company recently signed a seven-year contract, which calls for delivery of 0.14 million tons of coal a year from the Rochelle Mine in southern Campbell County to the city of Ames, Iowa, municipal power plant. The contract goes into effect July 1, 1987 and replaces a previous contract the utility had with Fort Union Coal Company. Transportation of the coal will be by contract with C&NW and will replace BN's current contract. The Fort Union Mine is located north of the 10 mile northern extension line that C&NW and BN recently agreed to share, and is served entirely by BN.

Under a price reopener clause in an existing 20-year contract, Exxon Coal Resources U.S.A. and Omaha Public Power District (OPPD) recently renegotiated new coal prices for August 1, 1987, to August 1990. The contract calls for Exxon to supply 1.7 million to 2.5 million tons of coal per year from Carter Mining Company's Rawhide Mine to OPPD's Nebraska City, Nebraska, power station. The utility reportedly saved $6.5 million a year by renegotiating the contract. During the renegotiations, OPPD ran test burns of coal from the Fort Union, Caballo Rojo, Eagle Butte, Antelope, and Rochelle coal mines in the Powder River Basin.

In January, Wyodak Resources Development Corporation and Leter Lien and Sons renegotiated a 30,000-40,000 tons per year contract. The contract, which ends in June 1988, calls for coal deliveries from the Wyodak Mine east of Gillette to an aggregate plant in Rapid City, South Dakota.

In other news related to Wyoming coal, the 1987 session of the Wyoming Legislature (which ended in early March) considered several bills on coal taxes and coal development. Bills passed by the legislature and subsequently approved by the governor included: a coal equity tax bill, two economic development funding bills, and a bill making major changes to the Industrial Siting Act. HB 330, the "Coal Equity Tax Act of 1987," sets a limit of 80 cents per ton on the amount of severance tax paid on coal production. The limit applies only to new coal contracts signed between March 31, 1987 and March 31, 1989. The bill mainly benefits high-cost coal producers in southern Wyoming. Severance taxes for coal that is valued at over $7.62 per ton (assuming a 10.5 percent severance tax rate) or over $9.41 per ton (assuming an 8.5 percent severance tax rate) could only be assessed at the 80 cents per ton maximum rate.

A bill entitled, "Economic Development-STEA Alliance" (SF 227 and Senate Enrollment Act 63) establishes a Wyoming Science Technology and Energy Authority (STEA). The authority will promote economic development by investing in Wyoming businesses that are using new technology, by issuing bonds for these investments, and by collecting royalties from these investments to pay off the bonds. Up to $10 million in state permanent funds is available for investment in these STEA bonds. Another bill (SF 181) establishes a permanent fund investment program to assist Wyoming firms involved in clean coal technology or coal enhancement projects. This bill allows investment of $30 million already present in the state's Permanent Mineral Trust Fund.

Finally, the "Industrial Siting Act" (HB 78) changes some of the review procedures for proposed new industrial projects, reduces some duplication of work by several state agencies in project review, and provides some exemptions for siting smaller mine developments.

Two bills considered by the legislature, but not passed, included a bill to repeal the 2 percent Coal Impact Tax after the first quarter of 1987 and a bill allowing the deduction of federal coal excise taxes (for black lung and abandoned mine land reclamation fees) from the value of coal when assessing severance and property taxes.

The coal impact tax was due to expire on January first of the year after the total proceeds from the tax reached $160 million. In 1986, some Wyoming coal companies prepaid their taxes into this account in an attempt to reach the $160 million limit and make the impact tax expire on January 1, 1987. Although the proposed bill and its amendments did not pass, the imposition and collection of the Coal Impact Tax into 1987 created controversy. Coal companies that prepaid into the Coal Impact Tax Fund contended that the fund did indeed exceed the $160 million threshold in 1986 and that the special tax should not be continued in 1987. The Wyoming Tax Commission and the State of Wyoming contended that because the $160 million threshold was not reached in 1986 and because the bill repealing the Coal Impact Tax Act was not passed by the legislature, that collections of the tax should proceed through 1987. At stake in the controversy was from $20 million to $23 million in additional taxes paid into the Coal Impact Tax Fund.

Passage of the bill on the deduction of federal excise tax on coal from the coal's valuation would have cost the State of Wyoming an estimated $9 million to $15 million a year in tax revenues (from decreased valuation of coal).

Richard W. Jones, Coal Geologist
Geological Survey of Wyoming

URANIUM AND INDUSTRIAL MINERALS UPDATE

Uranium

Development continues on two new *in situ* uranium mines. Everest Minerals is developing an *in situ* mine at the site of Exxon's Highland Mine in Converse County. This project is scheduled to begin production in 1988, with an initial annual production of 500,000 pounds of uranium oxide (yellowcake).

Malapai Resources Company, which is developing an *in situ* mine near the Pumpkin Buttes in Converse County, announced plans to begin production in 1988. Malapai has announced three uranium supply contracts, one for 250,000 pounds of uranium oxide per year with Societe Auxiliare D'Energie of France, one for 550,000 pounds of uranium oxide per year with Wisconsin Electric Power Company, and an undisclosed amount with a "confidential" buyer. Malapai Resources is a subsidiary of the AZP Group Inc., the holding company of Arizona Public Service Company.

Pathfinder Mines Corporation, 80 percent of which is owned by the French Company COGEMA, is nearing completion of its $4-million renovation of the Lucky Mc Mill in the Gas Hills. This project was scheduled for completion in early 1987. As of March 15, 1987, however, no date had been set for reopening the Gas Hills operations. Pathfinder-COGEMA is still producing uranium from the Shirley Basin, an operation that currently employs about 125 workers.

Uranium exploration should increase somewhat this summer as the reduction of uranium stockpiles by utility companies continues. Utility companies have maintained large stockpiles of uranium ordered in the 1970s for power plants that were never constructed. Existing nuclear plants (there are over 100 operating in the United States) have used fuel from these stockpiles, resulting in their gradual reduction. The year 1986 was the first year since 1980 that consumption of uranium exceeded production. Now, new supply contracts will have to be let to supply the existing plants. Since the U.S. Congress failed to pass any import restrictions for uranium, many new contracts have been let to Canadian and Australian producers. Deposits of uranium in those two countries are higher in grade than U.S. deposits and are less expensive to mine. The production of uranium in Wyoming by *in situ* methods may be competitive with uranium mined in foreign countries.

The March 1987 spot market price of uranium was $16.75 per pound of uranium oxide, down from $17.00 last quarter, and up from $16.65 in February. This compares to the recent low of $14.00 per pound in 1985.

The controversy over the disposal of uranium mill tailings (material left after uranium has been removed from the ore by the milling process) left at the old Susquehanna-Western mill near Riverton was apparently settled in early 1987. The U.S. Department of Energy and the Wyoming Department of Environmental Quality agreed to move the tailings to an abandoned mine pit in the Gas Hills. American Nuclear Corporation has offered one of its abandoned pits as a dump site to hold the tailings.

Industrial Minerals

The value of nonfuel mineral production in Wyoming increased in 1986 by 11 percent over 1985, according to figures released by the U.S. Bureau of Mines. This increase was due mainly to increased sand and gravel and trona production. Bentonite production decreased significantly, somewhat offsetting the other increases. In 1986, Wyoming ranked 12th in production of nonfuel minerals, up from 14th in 1985. All of Wyoming's nonfuel mineral production is industrial minerals.

Trona

Soda ash (refined trona) production in Wyoming through October 1986 was 2 percent above the 1985 figures, according to the U.S. Bureau of Mines, indicating as yet no significant increase in consumption. Increases by some producers were offset by corresponding decreases at other plants. Soda ash is used primarily in glass manufacture and also paper whiteners, water purifiers, and sodium chemicals.

Tg, Incorporated (formerly Texasgulf) filed a plan with the Wyoming Department of Environmental Quality for a permit to increase its production capacity from 1 million tons of soda ash per year to 1.3 million tons per year. The requested production increase is not the result of a major plant modification, but reflects small changes within the plant that permit some increases in capacity. No large production increase or increased employment are planned for the near future. The permit will not increase allowable emissions from either the trona refining plant or the company's adjoining coal-fired power plant. Tg spokesman, Cam Albin, was quoted as saying the plant will produce about 1 million tons this year.

Efforts have been made recently by the Wyoming congressional delegation and the American Natural Soda Ash Corporation, (ANSAC), an export cooperative of the five soda ash producers, to persuade foreign countries, particularly those in the Far East, to lower their import barriers to U.S. natural soda ash. So far, their efforts have been unsuccessful. In February 1987, yet another trade mission combining representatives of the congressional delegation and ANSAC was undertaken. Small increases in exports to South Korea and Taiwan have been made, but so far no easing of restrictions by Japan has been announced. Mainland China continues to be the chief overseas buyer of Wyoming soda ash.

Phosphate

Domestic phosphate production increased in 1986 over 1985 production, according to the U.S. Bureau of Mines. Production increased in the Florida region and in the western states. No phosphate has been mined in Wyoming since 1977, but Chevron Minerals Company is mining phosphate north of Vernal, Utah, and shipping it by slurry pipeline to the company's fertilizer plant southeast of Rock Springs. This plant opened in 1986 and has been producing fertilizer since last September.

Bentonite

Bentonite producers continued to lose sales due to the decline in oil and gas well drilling activity in 1986 and the decline in the demand for binder clay used in taconite (iron ore) processing. Bentonite production declined 31.4 percent from 1985 levels, according to data from the U.S. Bureau of Mines.

Gypsum

Despite the temporary closure of the Red Mountain Gypsum Mine at Laramie in 1986, Wyoming's production of gypsum increased 10 percent over 1985 levels. Production from Celotex Corporation at Cody and Georgia-Pacific Corporation north of Greybull is used primarily for wallboard.

Other Industrial Minerals

Missouri Basin Electric Company, which operates the Laramie River Station (a coal-fired, electric-generating plant), advertised for bids for high-calcium limestone for use as "power rock" (limestone mixed with coal to produce even burning). Bids were submitted for rock from the Cheyenne, Laramie, and Hartville areas.

The Geological Survey of Wyoming has been working with both Holly Sugar and Western Sugar to help the companies locate a source of sugar rock (limestone) in Wyoming. Both Holly Sugar, in Torrington, and Western Sugar, which has plants in Mitchell, Scottsbluff, and Bridgeport, Nebraska, will conduct burn tests on Wyoming limestone this season.

Several Wyoming Highway Department contracts have been let for rock for construction or resurfacing projects this season. At the present time, it appears that production of crushed stone and sand and gravel for highway construction will equal or surpass that of last year.

Ray E. Harris, Uranium and Industrial Minerals Geologist
Geological Survey of Wyoming

METALS AND PRECIOUS MINERALS UPDATE

Wyoming may have the greatest repository of low-grade strategic and critical mineral resources in the United States. Essentially all of the strategic and critical minerals occur in Wyoming in some quantity, but the extent of most of these deposits is not known. Because of the importance of these minerals to our nation, the Geological Survey of Wyoming recently submitted a proposal to the Federal Government to map and sample many of these deposits over the next 10 years.

Some deposits considered top priority include:

(1) Platinum-palladium mineralization associated with shear zones along the northern margin of the Mullen Creek mafic complex (McCallum or Orback, 1968, Hausel and Harris, 1983). This mineralization is an attractive exploration target because the platinoids may have been remobilized from the Mullen Creek mafic complex. It has been estimated that 16,870 ounces of palladium and 910 ounces of platinum were recovered from the New Rambler Mine in this area between 1900 and 1918.

(2) Chromium-nickel anomalies associated with ultramafic schists in greenstone terrains in several of the state's mountain ranges. In recent years, chromium and nickel anomalies have been detected in komatiitic schists in the Elmers Rock greenstone belt (Graff and others, 1982), and in the South Pass greenstone belt (Hausel, 1987). Additionally, significant chrome-bearing schists have been identified on Casper Mountain and in the Deer Creek region of

the northern Laramie Range. Based on drilling in the 1940s, at least 575,000 tons of 8.7 percent Cr_2O_3 were delimited on Casper Mountain. Very little information is available on the Deer Creek property, although 1,080 tons of chromite ore averaging 40 percent Cr_2O_3 were mined prior to 1932 (Osterwald and others, 1966).

(3) Titaniferous-magnetite in anorthosite in the central Laramie Range. This 350-square-mile anorthosite batholith contains abundant aluminum-rich rock considered to be a gigantic low-grade aluminum resource. Pods of titaniferous-magnetite in the anorthosite batholith contain significant titanium, vanadium, and iron resources as well as anomalous manganese and chromium (Osterwald and others, 1966). This is one of the largest (if not the largest) deposits of titanium and vanadium in North America.

(4) Tungsten in quartzofeldspathic gneiss at Copper Mountain. Based on preliminary investigations, Hausel and others (1985) suggested that tungsten mineralization on Copper Mountain in the Owl Creek Range may be stratiform in gneiss. The stratiform character of the deposits may indicate potentially large-tonnage mineralization.

(5) Diamondiferous kimberlite in the Laramie Range. The State-Line district, Wyoming-Colorado, has one of only two known occurrences of diamonds found in place on the North American Continent and the only occurrences of diamond-bearing kimberlite in the Western Hemisphere. The extent of these resources is not known, but field evidence suggests that many more kimberlite intrusives may be found in Wyoming (Hausel and others, 1979; 1985).

These are only a few of the strategic and critical mineral localities that would be investigated in detail if the Geological Survey of Wyoming is granted sufficient funds. There is no question that Wyoming's strategic mineral resources not only offer possible economic diversification for the state, but they also provide a potential source of critical minerals necessary for our nation's economic health and defense.

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W. Dan Hausel, Deputy Director,
Geological Survey of Wyoming

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Spring Agricultural Outlook

The outlook for the agricultural sector still sends mixed signals for the remainder of 1987. Stronger prices for the livestock industry are countered with continued weakness in almost all of the grain commodities. Continued high costs of operating the government's agricultural policy almost guarantee some revision in the coming legislature session, as the U.S. Congress struggles to bring the total budget down to Gramm-Rudman guidelines.

Livestock

The red meat industry continues to face increased supply and price competition from poultry producers. Poultry consumption per capita has already exceeded pork and will likely surpass per capita beef consumption in 1988. Total beef supplies may decline slightly in 1987; however, hog inventories are expanding and poultry production will continue to gain. Total meat supplies will likely approach a record in the second half of 1987, preventing any sharp increase in price levels.

Cattle numbers in the U.S. have declined annually every year since 1982. Stronger prices in 1987 will likely halt the decline, as producers begin holding cows and heifers to rebuild cow herds. The January 1, 1987 inventory indicated that producers in Wyoming have reduced cow numbers 19,000 head, as continual pressures from creditors have forced cattle sales to meet cash-flow demands. This thinking will hurt Wyoming producers in the next few years, as excess and underutilized forage will not be marketed through livestock, and the potential income from these resources will be lost.

The opportunity to profitably harvest these underutilized resources in 1987 for many operations may be past, however. The reduced supply of grass-type cattle had pushed prices into the $85/cwt range by late April. The price outlook for 700-800 lb. yearlings next fall would imply a 15-18 cent per pound negative price margin. Most gains from grazing yearling cattle in Wyoming will not offset that type of negative price margin. Producers who have excess grass may be better served by renting their pastures to someone else or taking cattle on a gain basis. This will reduce risk and still offer some income to the owner of the grass resources.

Sheep and lamb numbers in the U.S. increased 3 percent in 1986, the first increase in numbers since 1982. The value of sheep and lambs on hand January 1, 1987, reflected an increase of 16 percent above a year earlier. Increased profitability in the sheep industry will result in an additional expansion of the breeding flock in 1987.

Scarce supplies pushed slaughter lamb prices sharply higher during the first quarter of 1987. Price levels averaged fully $15 higher than a year ago. The price outlook for all classes of sheep and lambs is higher than a year ago. The price outlook for all classes of sheep and lambs is higher for the remainder of 1987. Continued strength in the domestic wool market for 1987 helps boost returns for the sheep industry. Strengthening demand relative to the reduced supply has at least temporarily added price strength to this basic commodity for the first time in six years. Weakening of the U.S. dollar is partly responsible for stronger prices of U.S. wool on international markets.

Grains

Agricultural exports fell to $11.9 billion in the first five months of fiscal year 1987. Grain shipments, especially corn for the U.S.S.R. for the October 1986-February 1987 period, accounted for most of the decline in export value. World trade in wheat has remained virtually unchanged, although world production was up in 1986. China had record production of 3.3 billion bushels to more than offset the 3 percent drop in Australia's production.

Estimates of U.S. supply and demand for wheat have changed little in recent months. Total supply of 4 billion bushels will be reduced somewhat during the current marketing year; however, ending stocks projected at 1.848 billion bushels will still represent 88 percent of last year's output.

Wyoming producers will generally need to participate in the government program in order to maximize income from their grain production alternatives. Wyoming wheat production increased in 1986 but should decline somewhat in 1987 as producers participate in government set aside and conservation reserve programs.

Agricultural income in 1987 will increase relative to the past several years, primarily as a result of stronger livestock prices. Unfortunately, the increase will not mean that producers will move to the profit side of the ledger. Costs will increase to offset part of the price increase, and the increase will not rise nearly enough to equal the prices that existed in 1978-1979.

Robert D. Carver
University of Wyoming

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Job Openings Outlook

Shorthand Reporters

Shorthand reporters work primarily in courtrooms or hearing rooms, recording proceedings from court trials, legislative hearings, business conferences, and arbitrations; reading portions of testimony during trials; and preparing official transcripts of court proceedings. There are three areas of specialization for reporters: 1) official reporters who are employed by the court system; 2) free-lance reporters who are employed by client/attorneys to take depositions; and 3) administrative hearing reporters who are employed by the county, state, or federal government agencies. Reporters are required to write at least 225 words per minute and have a thorough knowledge of English, grammar, punctuation, and spelling. Familiarity with medical and legal terminology is necessary. Most work over 40 hours a week, sitting for long periods of time.

Demand for shorthand reporters is affected by the number of civil and criminal cases coming to court, the increased use of mechanical recording equipment in the courtroom, and the replacement of those who leave the occupation. As automated recording and word-processing technology increases the productivity of existing reporters, employment growth will be limited. However, a shortage of qualified workers possessing the technical skills needed in this area may be felt statewide. Nationally, competition for entry level positions is keen as more students enter the field. Opportunities are best for those who have earned certification through the National Shorthand Reporters Association and who have established a good business reputation and clientele.

Most employers require graduation from an approved court-reporting school and a certificate of proficiency. Two years of specialized training are necessary to acquire the knowledge, speed, and skills required to enter this occupation. Personal contacts, such as fellow court reporters, attorneys, shorthand school instructors, and professional organizations, are the usual hiring channels used by employers and job seekers.

Salaries vary according to court and geographic location. Average entry wages range from $14,400 to $25,000 per year. Average maximum wages range from $25,000 to $60,000 per year. It usually takes five to 10 years to reach this maximum. Free-lancers are paid on a percentage of work done and average $24,000 per year.

Legal Secretaries

Legal secretaries perform general clerical duties, including scheduling appointments, typing, filing, screening phone calls, and welcoming visitors. In addition, they may pay bills for witness and process fees, record trial dates, schedule the appearance of witnesses, produce evidence at trials, and deliver subpoenas. The ability to communicate effectively and work independently, as well as work under deadline pressure and maintain confidentiality standards, is necessary. Legal secretaries usually work 40 hours per week, with occasional overtime required to meet deadlines.

Demand for legal secretaries is largely created by the need to replace those who leave the occupation. Generally, there is a surplus of applicants for open positions; however, many do not have the training or skills required to do the job. Changes in the legal profession are heading toward greater responsibility and opportunity for the legal secretary. In addition to basic secretarial skills, an emphasis is being placed on legal research and trial preparation.

Although most employers prefer secretaries who have completed a one-year or two-year legal secretarial program, some firms will hire experienced secretaries and train them. A minimum typing speed of 60 to 70 words per minute with accuracy and punctuation is required. In addition, grammar and vocabulary skills, and familiarity with legal terminology and processes, are stressed. Experience with word-processing equipment is important.

Wages vary with employment setting, geographic location, responsibilities, and skills. The average entry wage for most secretaries in Wyoming is between $800 and $1,000 per month. Legal secretaries can earn as much as $1,500 per month.

For more information contact the Wyoming Career Information System, Administration Building Room 314, 2810 House Avenue, Cheyenne, Wyoming 82001, or phone (307)635-3055.

Juanita M. Ackerman, Wyoming
Career Information System

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Wyoming Coincident Indicators Index

For the fourth quarter of 1986, the seasonally adjusted Wyoming Coincident Indicators Index (WCII) held close to where it ended the third quarter and was up from the low reached in August. The WCII is derived using several economic variables which tend to coincide with changes in the overall Wyoming economy. It is computed on a quarterly basis by the Division of Research and Statistics, Department of Administration and Fiscal Control.

The WCII is composed of four variables which are; 1) total state employment, 2) total wages reported for the quarter, 3) total sales and use tax collections for the quarter, and 4) an industrial index. The industrial index is a composite index of industrial variables used to represent three of Wyoming's industrial sectors. For the industrial index, mining is represented by the number of active oil well drilling rigs. The agricultural sector is represented by a composite index of prices received for all Wyoming agricultural commodities. The third industry is tourism, which is represented by the total gallons of motor fuels plus gasohol sold each month.

Seasonally adjusted values for all four WCII variables were down sharply from the year before. The industrial index as a component of the WCII was down roughly 25 percent from the year before, with the drilling rig count largely responsible. The rig count was off over 50 percent from fourth quarter 1985 to fourth quarter 1986. Sales and use tax collections, total state employment, and total wages were all down from year-earlier levels also. The seasonally adjusted WCII was down 6 percent from the year before. Comparing the fourth quarter to the third quarter 1986 offers a glimmer of hope. The seasonally adjusted industrial index was up 4.8 percent from the third quarter, led by the active drilling rig count which was up over 30 percent. In addition, total employment and total wages were both up from the previous quarter, and sales and use tax collections were about even for the seasonally adjusted series. Overall, the seasonally adjusted WCII was up from third to fourth quarter, but by less than 1 percent.

Early signals for the first quarter of 1987 indicate that the glimmer of hope from the fourth-quarter-over-third quarter rise in the WCII may be shortlived. For January, total employment, sales and use tax collections, and the oil drilling rig count were down from fourth quarter 1986 levels.

The drops for total employment and sales and use tax collections reflect the general weakness of the Wyoming economy. The rise in the fourth quarter was likely the result of holiday season spending. This is a time when people stretch their budgets to provide a happy holiday season. The increased sales require additional employees but only temporarily until the holiday season is over. The fourth quarter rise in oil drilling was seen as a temporary phenomena related to already budgeted drilling money being spent. It had not been spent earlier in the year due to the extreme price decline. The slight surge was considered temporary and did not reflect any real renewal of confidence by the industry.

Steve Furtney, DAFC

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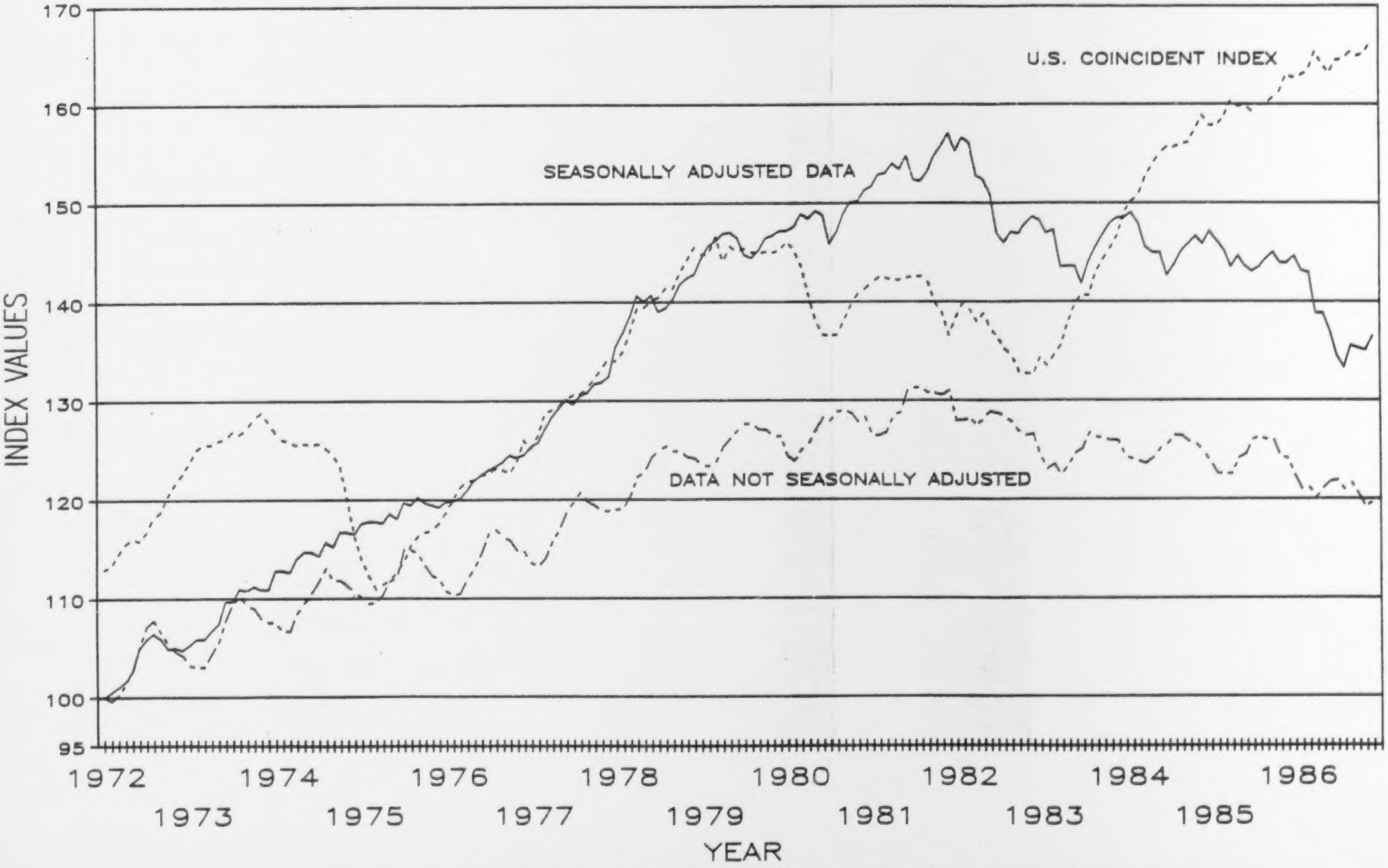
WYOMING COINCIDENT INDICATORS INDEX
JANUARY 1972 THROUGH DECEMBER 1986
APRIL 20,1987



Shaded areas represent U.S. recessionary periods.

INDUSTRY PROFILE

The Wind River Reservation: An Historical Overview

No residents of the state can call themselves "native Wyomingites" with greater justification than the American Indians. Wyoming's low-swept bluffs and high mountain valleys are often laced with the lithic evidences of centuries-old occupations by the state's first inhabitants. But of many groups, only the Northern Arapaho and Wind River Shoshone tribes of the Wind River Reservation remain in Wyoming. The challenges they face, both cultural and economic, are formidable. Theirs is the task of perpetuating rich cultural heritages in the midst of a larger technological society that seems to honor change more than tradition.

The purpose of this article is to provide some insight into the history and development of the Wind River Reservation. Particular emphasis will be devoted to the geographical boundary changes of the reservation, since the land itself, and the things of the land, are at the heart of Native American tradition. The Arapaho story of creation serves as an illustration. One account tells of a time when there was nothing but water. Upon the water, an Arapaho floated with his sacred Flat-Pipe. He cried in loneliness until several ducks flew to his rescue. Flat-Pipe told the ducks to dive under the water and bring up dry land, but the ducks failed. Then a turtle dived through the depths and brought up clay, from which Flat-Pipe fashioned the world and every living creature.

Flat-Pipe, it should be noted, is in the safekeeping of the Northern Arapaho tribe.

Geography and Climate

The Wind River Reservation is an area of about 3,500 square miles in size, situated in Fremont and Hot Springs counties of west-central Wyoming. The reservation is bordered roughly on the north by the Owl Creek Mountains and on the west by the Wind River Mountains. At their farthest points, the boundaries of the reservation stretched 70 miles from east to west and 55 miles from north to south.

The topography of the reservation is diverse, including dry lowlands, rolling hills, and high mountains. Elevations range from 4,500 feet on the plains to over 11,000 feet in the mountains. The reservation has good supplies of water, which support livestock and irrigated crops. There are approximately 358,000 acres of forestland and 1.6 million acres of open grazing land. Many of the ranches are small, consisting of 100 cattle or less. One exception is the Arapaho Ranch, operated by the Northern Arapaho tribe, which runs approximately 7,000 head of cattle. Some timber development has occurred in the past, but the tribal governments have not been generally pleased with the results. The forest resources also have potential for such recreational activities as fishing, hunting, skiing, and sightseeing tours.

A variety of minerals can be found on the reservation, including oil, natural gas, coal, gypsum, uranium, phosphate, copper, gold, and asbestos. From a commercial standpoint, the most important minerals are oil and gas, which have been a mainstay of tribal income.

The climate of the reservation varies with the terrain. On average, there are 128 frost-free days and 13.5 inches of precipitation. About half the precipitation occurs during the growing season. Winds are generally light (6.9 m.p.h. average velocity). Low relative humidity helps make the summers pleasant and the winters fairly mild. The high mountains shelter the area during all four seasons.

Early Arapaho History

Linguistically, the Arapaho language is of Algonquian stock, the same language group as the Cheyenne. The name "Arapaho" is apparently a corrupted pronunciation of a Pawnee term meaning "he who buys and sells." When the Lewis and Clark expedition inquired about the tribe, the Pawnee word was apparently mispronounced. The word "Arapaho" does not exist in the traditional Arapaho language.

At one time, the Arapaho territory was apparently located in northern Minnesota and may have extended into the eastern provinces of Canada as well. By about 1730, the Arapaho obtained the horse and migrated onto the Great Plains with tribes like the Cheyenne.

While the Arapaho and Cheyenne were related linguistically, the one did not understand the language of the other. Thus, the tribes communicated by sign language. The two tribes did have common camps, common stories, and religious similarities. They probably retained their separate identities, however, because of the language difference.

After arriving on the Great Plains, the Arapahoes came to occupy a prominent position in a confederacy of tribes that included the Kiowa, Blackfeet, Gros Ventres, Jicarilla Apache, and Taos Pueblo. The tribes of this confederacy were arrayed in a vast encirclement of the Great Plains, with the Arapahoes located at the center. The confederacy was helpful in warding off such traditional enemies as the Utes, Bannocks, Pawnees, and Shoshones. Each year, the tribes of the confederacy met to engage in games, to meet in council, and to buy and sell goods. The Arapahoes, at the center of both the confederacy and the activity, came to be regarded as "those who buy and sell."

With white expansionism came attempts to establish more clearly the boundaries of the Great Plains tribes. In 1851, the Arapahoes and Cheyennes were allotted an area of 122,000 square miles that extended south of the North Platte River to the Arkansas River, and east from the Rocky Mountains to western Kansas, including parts of Nebraska and Wyoming. The lands were established for the Cheyenne and Arapaho for "as long as the grass should grow."

Early Shoshone History

The Shoshone tribe is of the Shoshonean linguistic stock of the larger Uto-Aztecan family. In linguistic terms, they are related to the Paiutes, Utes, and Bannocks. At one time, the territory of the Shoshonean people stretched from the Cascades and Sierra Nevadas eastward to the Northern Great Plains, then southward nearly to Mexico. Later, the bands roamed closer to the high mountains for protection from enemies. The Shoshones were not a warlike tribe in many respects and did not acquire firearms as early as other tribes.

Considerable myth and legend surrounds one band in northwestern Wyoming known as the "Sheepeaters." They were probably a band of Shoshones, forced into the mountains by their enemies. Some accounts of the Sheepeaters attribute their demise to epidemics of smallpox. In any case, by 1879, those who survived apparently had joined with neighboring tribes and lost their separate identity.

The early Shoshones wandered in small family units over a large area of the Great Basin and Upper Plateau. As they migrated over the Rocky Mountains to the east, larger tribal groups were formed.

The Shoshone economy was like that of most hunter-gatherer groups. Trade became increasingly important as white men entered the area. The Shoshones were good hunters, and unlike most plains tribes, competent fishermen as well. Fishing skills were handed down to succeeding generations and may have been encouraged by contacts with tribes in the Pacific Northwest.

The population of the Wind River Shoshone apparently experienced wide fluctuations. In addition, it would not appear that a strong sense of tribal unity developed until rather late. If the Shoshone were led by a strong head chief, the tribe functioned as a unit. If not, tribal government tended to collapse, until it formed again under a new leader. It is probably fortunate that at a time of radical change on the plains following white contact the tribe was lead by the great Chief Washakie.

Reservation Evolution

The Shoshone territory was established under the terms of the Fort Bridger Treaty of 1863. The land mass of the territory included parts of Colorado, Utah, Idaho, Montana, and Wyoming. The treaty affirmed friendly relations between the Shoshones and the U.S. Government, and made provisions for safe travel routes, including telegraph and stage lines, across Shoshone territory. It also allowed military posts along travel routes, provided compensation for game loss, and provided various goods to the tribe. This treaty established the concept of a reservation for the Shoshone tribe, although the boundaries were vague.

In 1868, the boundaries of a reservation were fixed firmly by a treaty between the Shoshone and Bannock tribes, and the U.S. Government. The size of the Shoshone reservation was greatly reduced from the territory established in 1863; the Wind River Reservation became a defined entity within Wyoming. In a strict sense, this was the last treaty pertaining to the lands of the Wind River Reservation since later agreements were not referred to as treaties. Under the terms of the treaty, the Shoshones agreed to stay on their reservation. An agent of the U.S. Government would supervise reservation affairs. Buildings were to be constructed for the agent, a doctor, farmer, carpenter, blacksmith, miller, and engineer. Shoshone children between the ages of six and 16 were supposed to attend school. Heads of families could receive up to 320 acres of land for farming.

The reservation contracted further in size with the Brunot Cession of 1874. This agreement transferred a large southern portion of the reservation to the U.S. Government for the sum of $25,000. The cession followed the discovery of gold at South Pass. The money received was supposed to be used for the benefit of the tribes. For a period of five years, $5,000 worth of goods and cattle were to be delivered to the Shoshones, and for five years, the sum of $500 per year would be paid to Chief Washakie. The U.S. Government also agreed to keep intruders off the reservation.

The Arapahoes and Cheyennes were dealt with more harshly by the U.S. Government. From the standpoint of treaties, the two tribes were frequently handled as one entity. Congressional appropriations included both tribes and annuities were divided between the two.

By 1851, both the Cheyenne and Arapaho had separated into northern and southern bands. The division may have resulted in part as immigrant trails divided the buffalo herds. When the southern bands journeyed south during the 1870s, the northern bands remained in the Northern Great Plains.

The first official U.S. Government recognition of an Arapaho and Cheyenne territory occurred in 1846, which included land between the Platte and Arkansas rivers. These tribal lands were formally recognized in the Fort Laramie Treaty of 1851. While the primary motive of the treaty was probably to halt raids on travelers and immigrants, a secondary motive was to establish the boundaries of tribal lands.

The peace established by the treaty of 1851 was short-lived, however. As white settlers moved onto the plains in greater numbers, and as the buffalo herds dwindled, the tribes found themselves deprived on their tradition means for survival. Increasingly, annual government rationing to maintain their existence became an established fact of life. At the same time, direct conflicts between Indians and whites became commonplace. The U.S. Government retaliated by withholding annuity goods, which made the situation for Indian people ever more desperate.

Even though it was never signed by the northern bands of the Arapaho and Cheyenne, the 1861 treaty at Fort Wise in Kansas Territory did not recognize the northern bands as separate from the southern bands. Thus, when the southern bands occupied reservation lands in the Indian Territory, the northern bands were officially trespassing on land already "purchased" by the U.S. Government. While there were no serious attempts to move the northern bands onto the reservation occupied by the southern bands, there was little consideration for a separate reservation. According to the 1861 treaty, in the eyes of the U.S. Government the northern bands had already relinquished claims to tribal lands in exchange for a reservation in the Indian Territory.

Various attempts were made to settle the Northern Arapahoes on the reservations of other tribes. In 1868, attempts to place the Arapahoes on the newly created Shoshone Reservation failed. The Shoshone were still opposed to sharing their reservation when the tribes met in 1870.

The essentially stateless Northern Arapaho wandered northward to the area near Fort Fetterman. In 1874, following a bloody encounter with the Wind River Shoshone and troopers from Fort Washakie, many of the northern band were moved to South Dakota. In 1878, and in desperation at being dominated by the Sioux, the Northern Arapaho agreed to join the southern band in Oklahoma. After refusing to move further than the North Platte River, however, the tribe demanded a council with the U.S. Government. Fearing an outbreak of hostilities, Wyoming Governor J. A. Campbell urged that the Northern Arapaho be placed on the Shoshone Reservation.

Chief Washakie of the Wind River Shoshones strongly objected to such a resettlement. By then, however, the Northern Arapahoes had been depleted in numbers and reduced to poverty. Finally, Washakie agreed to the resettlement, but only after assurances that the move would be temporary. Despite the enmity that existed between the two tribes, Washakie simply had "too great a heart to say no," wrote one observer. In 1878, the Northern Arapahoes were moved to the Wind River Reservation. They were located in the eastern stretches of the reservation, with two bands, one under Black Coal and the other under Sharp Nose, camping at different sites. Ostensibly, they would remain until a separate reservation could be found for them. But the months turned to years and still the Northern Arapahoes remained on the Wind River Reservation, as they do even to this day.

Decline of Tribal Economies

When the Shoshones moved onto the Wind River Reservation, they continued to rely on such traditional activities as hunting for their livelihoods. However, they were quickly reduced from a state of relative wealth to a condition of general poverty. The buffalo were exterminated, meaning a loss of meat products and sales from robes. Farming generally failed. Tribal cattle herds were lost to swindlers and rustlers. By 1885, the major source of Shoshone subsistence had become the government.

For their part, the Northern Arapahoes had tasted little but bitterness prior to settling on the Wind River Reservation. They arrived in desperate straits, bereft of tribal lands and driven from one agency to the next, only to be dominated by other tribes. In some ways, settlement on the Wind River Reservation marked a period of relative stability, although their economic circumstances continued to be generally poor.

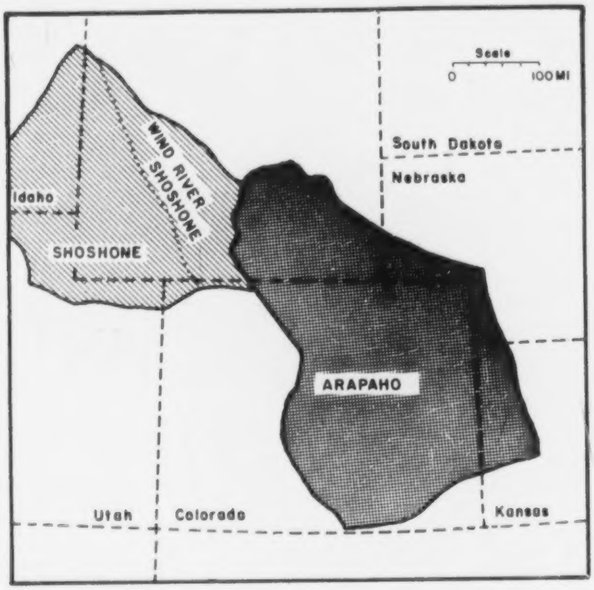
Subsistence for both tribes after 1885 depended largely on annuities paid by the U.S. Government. The annuities were not automatic, nor were they gifts from the government. In essence, they were time payments for lands ceded by the tribes. Since annuities for both the Arapahoes and Shoshones were scheduled to run out in 1898, additional sources of income were sought.

Because previous annuities had resulted from land cessions, it seemed appropriate to consider more cessions. It was hoped such cessions might provide income to the tribes for many years and also provide funds for development. Large land cessions on Indian lands were not considered acts of desperation. Many tribes were encouraged to dispose of "surplus land" as a means of raising money. The General Allotment Act of 1887 provided that lands not allocated to tribal members could be sold and the resulting revenues used for the welfare of the tribe.

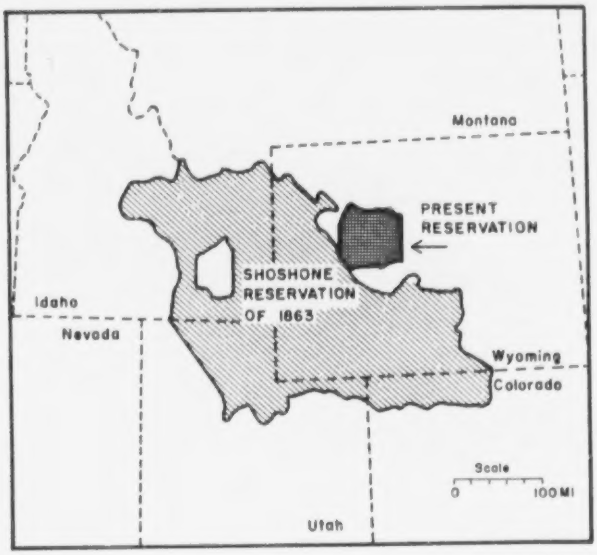
In this context, the First McLaughlin Agreement was signed in 1897. This agreement concerned the cession of land in the northeastern corner of the reservation, including the hot springs at present-day Thermopolis. While considerable myth shrouds the agreement, there is evidence to suggest the tribes advanced the notion of the sale. Agent Richard H. Wilson remarked that the tribes requested a letter be sent to Washington "about selling the Big Horn Hot Springs. I did write, and (the president) has sent Inspector McLaughlin here to talk to you about it."

In exchange for 55,040 acres of land, the agreement provided that the tribes would be paid $50,000. It provided for per capita payments to Shoshones and cattle for Arapahoes. In addition, the agreement gave the tribes

Historical Boundary Changes of Tribal Lands

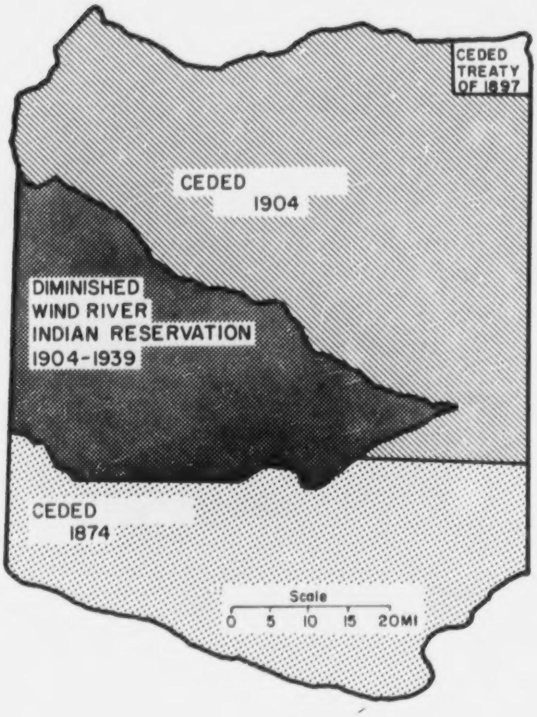


Native Lands

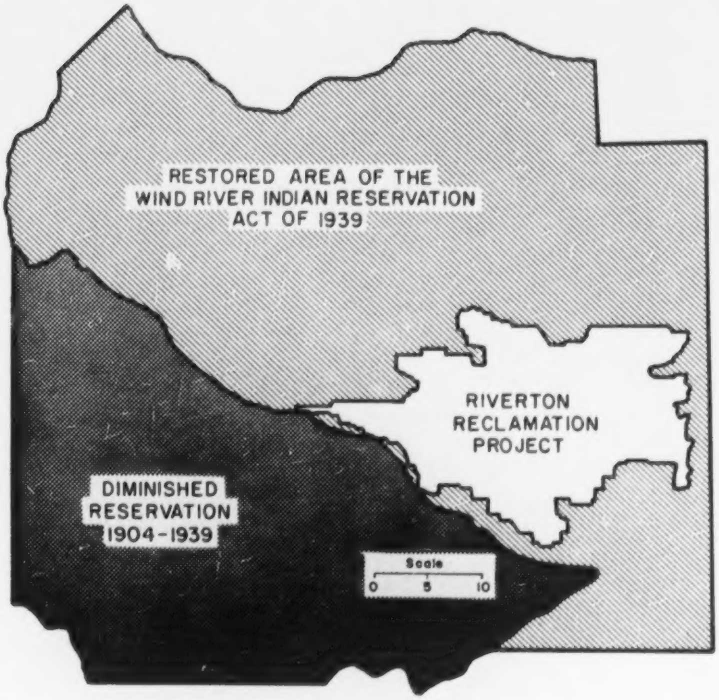


Original Shoshone Reservation

Source: *The Wind River Reservation Yesterday and Today:* from Paul B. Wilson, "Relationships of the Indian Reservation Land Tenure System to Land Use on the Wind River Indian Reservation," (no date). Adapted.



Cession Agreements 1874-1904


RESTORED AREA OF THE WIND RIVER INDIAN RESERVATION ACT OF 1939
RIVERTON RECLAMATION PROJECT
DIMINISHED RESERVATION 1904-1939
Scale
0 5 10

Restored Reservation 1939

until 1902 to make more secure arrangements regarding future income. The First McLaughlin Agreement is commemorated each year by the "gift of the waters" ceremony at Thermopolis.

However, the economic windfall provided by the First McLaughlin Agreement was short-lived. Thus, in 1904, the tribes entered into the Second McLaughlin Agreement, perhaps the most unfavorable land bargain ever entered into by the tribes of the Wind River Reservation. Under the agreement, the tribes ceded 1,472,844 acres of land north of the Big Wind River for an irrigation district. Land was to be sold under the prevailing homestead acts. Proceeds from such sales were to be paid to the tribes for per capita payments, procurement of water rights, construction of an irrigation system, and the establishment of a school fund.

The Second McLaughlin Agreement meant that the tribes had bargained away control of nearly two-thirds of their reservation in order to acquire the means to develop the remaining one-third. Non-Indians entered the former Indian lands in larger numbers and settled. Regulations on leasing allowed non-Indians to graze cattle in large numbers, providing stiff competition to a fragile tribal economy. One of the few bright spots during this period was that cattle were kept in tribal herds, rather than being allotted to individuals. This provided some market for hay, some seasonal employment, and issues of meat.

On July 27, 1939, all land (except the area within the Riverton Reclamation Project) ceded by the Second McLaughlin Agreement which had not been homesteaded or purchased was restored to the tribes. In all, more than 1 million acres were returned. At the same time, the Shoshones were paid a settlement of $4,406,444 for accepting (against their wishes) the Arapahoes on the Wind River Reservation in 1878. The Shoshones received compensation for one-half the value of the reservation on the date of Arapaho relocation, plus interest accumulated until 1937. During the same period, the Arapaho tribe's one-half undivided share in the reservation was recognized. Areas ceded for the Riverton Reclamation Project but not used for that purpose were returned to the tribes in 1953. Mineral rights to the area were restored in 1958.

Economic Development

At present, the state of the reservation economy is a major source of concern for the Arapaho and Shoshone tribal governments. However, such concerns are not new. Aside from royalties collected from oil and gas production, most mechanisms for improving the tribal income picture have been only marginally successful.

As previously noted, the 1897 and 1904 cessions of tribal lands were viewed as avenues for improving the lot of tribal members. In the end, however, the cessions--and especially the Second McLaughlin Agreement--may have done as much harm as good. In the early years, the U.S. Government placed great hopes in teaching the Indians to farm as a means of improving their circumstances. But the plains tribes, accustomed to hunting and gathering in open country, did not adapt well to such sedentary pursuits. In addition, environmental constraints related to the availability of suitable lands for irrigation made it impossible for many persons to sustain themselves in this manner. While it is not possible to measure the cultures of the tribes against failures in agriculture, it can probably be said that many Indians simply were not interested in farming.

Ranching proved to be much more successful than farming. During the 1920s, many Arapahoes and Shoshones participated in programs that encouraged sheep and cattle ranching. Both the people and the land seemed better suited to this type of agriculture. By 1965, the focus of ranching had shifted almost exclusively to cattle.

Despite some success in ranching, only 14 percent of all Indian families made a living by ranching in 1965. Many others worked as unskilled labor, in part-time jobs, or were unemployed. Per capita payments derived largely from oil and gas activities were income mainstays for many tribal members. Attempts to increase the numbers of persons in skilled crafts had been only marginally successful. Some Indian businesses had been attempted, but few were successful. In 1965, the only Indian-owned business was an arts and crafts association that marketed Native American products through an outlet in Billings, Montana.

When the Shoshone and Arapaho tribes examined the economy again in 1977, the situation was substantially the same. There were no Indian-operated commercial businesses "to keep reservation income within the reservation," according to the Wind River Economic Development Planning Program. Job opportunities were not keeping pace with population growth; unemployment was high and opportunities were few.

"The Indian needs education and the development of new skills," tribal consultants noted. "The United States needs the contributions Indian culture can make to its common life. Few of the elements of the traditional value system of the Arapahoes and Shoshones contribute to a successful adjustment to western culture. The problem of a conflicting value system still remains unsolved."

S. T. Mast, IPR

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Tribes Face Difficult Economic Challenges

The occasion, from outward appearances, was not remarkable. It was a normal-looking business meeting conducted during normal business hours--a group of men seated around a long table, shuffling papers, making impromptu speeches, asking questions and lodging complaints, all the while dissecting such humdrum details of county government as traffic signs and solid waste disposal plans.

Yet despite its rather tedious content, the meeting was distinguished by the nature of its participation. For the first time in memory, the Board of County Commissioners and the Arapaho-Shoshone Joint Business Council were seated together in the Fremont County Courthouse, discussing areas of mutual interest.

When the representatives of a nation encompassed within a county meet with representatives of the encompassing county, there are potential pitfalls to understanding--borne of history and culture and past injustice--and reflected in differing perceptions, separate policy agendas, and even terminology ("BIA lands," for example, is decidedly not a proper term for "tribal lands.") But for now, at least, intergovernmental contacts such as those established between the Fremont County Commission and the Arapaho-Shoshone Joint Business Council appear to serve the interests of both parties. They are contacts impelled in no small measure by a depressed local economy.

Even though the county and tribal governments are independent entities, at some junctures their interests are interlocked. The county maintains several roads on the reservation, and persons living within the area are often eligible for county social assistance programs. The tribal governments may also elect to participate in countywide projects, such as solid waste disposal efforts. At the same time, tax dollars are derived from mineral production and private holdings located within the boundaries of the reservation. According to one tribal estimate, one-half of Fremont County's natural resource-related assessed valuation is tied to the Wind River Reservation. Between 1969 and 1984, according to the estimate, the State of Wyoming derived $35 million in severance taxes from oil and gas production on the reservation.

For the tribes, one major source of concern is whether they have received services in proportion to the taxes derived from the reservation. "They have about $90 million in valuation out there," according to John Philp, chairman of the Fremont County Commission. "They have been getting services for that, but possibly not as much in some areas as they deserve."

A greater willingness to interact with governmental entities like the Fremont County Commission as a means of protecting tribal interests indicates to many a new direction in tribal politics; necessitated, perhaps, by difficult economic circumstances, but hastened by the emergence of younger, more highly educated persons in tribal government leadership positions. In the past, the two tribal governments on the Wind River Reservation gained a reputation for not being able to get along with each other, let along anyone else. Historically, the Shoshone and Arapaho tribes had been enemies. Barely 100 years ago, Chief Washakie, the great Shoshone leader, complained bitterly to the U.S. Government about the presence of the Arapahoes on the Wind River Reservation. Cooperation, then, between the Arapahoes and Shoshones had little historic precedence. Geographically, the two tribes are still separated, with Arapahoes living generally east of the Wind River Meridian and Shoshones living to the west. In today's world, however, tribal leaders have recognized the commonality of their larger interests.

"There was a split in the past," John Washakie, chairman of the Shoshone Business Council, acknowledged. "Now, the income to tribal members has been hurt (due to declining oil revenues). A lot of the issues separating the tribes have gone away. Some of the old sentiments will be there, but we have to meet and talk to do the best thing for the tribes."

Gary Collins, chairman of the Northern Arapaho Business Council, agreed. Collins said he sensed a "renewed interest in the tribes to get things done together, to put personalities aside and look at issues. We are more informed in many ways."

Patrick Goggles, grantsman/administrator for the Northern Arapaho Business Council, also felt there was a growing realization that tribal differences must not block strategies to benefit both tribes. "The old tribalist approach--and I am not saying this to downgrade my elders--but the approach was we always watched one another. We didn't want the Shoshone to get ahead of us, or the Shoshone didn't want the Arapaho ahead. But for the well-being of the land base, for the Wind River Reservation, there has to be an economic unification. And I think this is what's happening. We are seeing more decisions that are for the land base itself, rather than for the interest of separate tribes."

Even so, the machinery of tribal government can be cumbersome. Each tribe has a business council, composed of six elected members. Each council can act independently; at the same time, the councils can decide upon common strategies as the joint business council. The ultimate authority of a tribe is the general council, which in essence is a general assembly of tribal members. The actions of one general council can be overruled by the actions of subsequent general councils. There are no constitutions or by-laws. The tribes tend to live from one resolution to the next. The result is a system fraught with uncertainty, Goggles observed, which can make life difficult for potential businesses.

Developing the economy of the Wind River Reservation is no simple task. Private sector activity which produces jobs for Indian workers is virtually non-existent. Tribal officials estimated that unemployment runs between 65 percent and 80 percent, depending upon the time of year. A recent survey in district #14 (Wyoming Indian Schools) conducted by the Arapaho tribe revealed an unemployment rate of 85 percent. The largest employer in the district was the school system itself. In addition, falling oil prices sapped individual allotment payments--a mainstay of per capita income--made to enrolled tribal members. In 1986, such payments dropped from $300 per month for Shoshones and $200 for Arapahoes, to $150 and $100, respectively.

As a starting point, tribal leaders would like to build from within by maximizing Indian spending power for the benefit of Indian people. At present, there is a general absence of service and retail outlets in Indian communities. Thus, personal income dollars have little opportunity to "turn over" in Indian hands, but flow rather quickly to Riverton and Lander where services are available.

"We can't turn the dollar over here," Washakie said. "The tribal governments haven't developed the infrastructure for attracting and holding businesses."

"We do not have a reservation economy," Collins added. "We export dollars, and import goods. We need places for tribal members to spend here, in basic kinds of consumer items. The basic necessities."

Some steps have already been taken toward that goal. Recently, the Arapaho Business Council received $250,000 from the Department of Housing and Urban Development (HUD), which was matched by $190,000 in tribal funds. The funds will be used to build a commercial center at Ethete, which will consist of a grocery store and gas station in a convenience-type format. The tribe also plans to renovate an existing convenience store to include expanded laundromat facilities.

In a joint effort, the tribes plan to conduct a "needs assessment" on the reservation. The project is intended to "upgrade" 1980 census data, which some tribal officials feel underestimates key population characteristics. Approximately 10 enumerators will canvass 100 percent of the households on the reservation. Among other things, the results will provide the tribes a means by which a strong demonstration of "need" can be made when applying for various federally funded programs.

Within the reservation, Washakie said there is additional agricultural land that could be put into production. A joint study with the Fremont County Commission to investigate the feasibility of opening a meat packing plant has been proposed. In addition, Arapaho Business Council members have explored the idea to some degree with the State Economic Development and Stabilization Board.

"The Arapaho are mainly interested from the standpoint that we as a tribe own a 7,000-plus head, cow-calf operation," Goggles said. "The concept of lean beef is not new to the tribes, they have always had lean beef. But the concept was intriguing being that we could expand the size of the herd and being that there was a possibility of finding more range for the Arapaho Ranch. It was intriguing to the business council to know there was a possibility their enterprise could contribute to a project of that magnitude."

For the moment, however, Goggles said the council had adopted a "wait and see" attitude, since other communities in Wyoming were pursuing the same concept.

For their part, the Shoshones operate Shoshone Enterprises, a construction business. There is also a Shoshone job-training program to prepare workers for various trades. A major problem, however, is that once workers are trained there are few employment opportunities on the reservation.

In addition to business council initiatives, there is some evidence of individual entrepreneurship on the reservation. Pat Bergie, a community health worker and member of the Shoshone tribe, said some efforts currently underway could result in small business development. One hope is that a non-profit organization can be developed around a reservation youth council, through which Native American ribbon shirts can be marketed. Initially, Bergie said the shirts could be marketed on the Wind River Reservation, through shops in Lander and Riverton, and on other reservations. Eventually, however, the shirts might be marketed as far away as Japan, where Bergie said some interest has already been expressed.

In addition, Bergie coordinated a 16-week business opportunities workshop in which 22 persons participated this spring. Each person was responsible for developing a business idea, mostly as sole proprietorships. The ideas ranged from automotive repair and exercise classes, to a photography studio and a fishing tackle shop. One goal of the workshop was to help participants formulate solid business plans: "I think the ideas have been here all the time, but I think this (the workshop) gives people a vehicle to actually plan," she said.

Bergie said she felt there were ample opportunities for small business development on the reservation. "Mainly, my perspective is with the per caps (per capita payments) falling and jobs so scarce on the reservation that something has to happen," she said. "I think almost anything can work out here as long as it is targeted to the right people and you provide good service."

Another avenue the tribes are exploring, albeit cautiously, is economic development activity that might include parties from beyond the boundaries of the reservation. A crucial ingredient would be the degree of benefit realized by the tribes, and at what cost.

While tourism, for example, is viewed in many parts of the state as a desirable means for increasing economic activity, it is greeted with less enthusiasm by tribal leaders.

Washakie felt some increase in tourism might be beneficial, if access and the number of persons on the reservation could be strictly regulated. At the same time, Goggles questioned the desirability of increasing tourism without adequate thought and planning. Goggles said the Arapaho people take great pride in their culture and are reluctant to see it exploited.

"Is it desirable?" he asked. "I don't believe it is right now. It is going to take some efforts by individuals or groups to promote tourism on the Indian reservation, and the kinds and degrees of tourism we want. It is exploitation of a culture, and how much you want to exploit that culture is a question. You know, a lot of us feel that we don't want to be sell-outs. But at the same time, we realize that there are possibly jobs and employment for our people." Without a clear concept of tourism on the reservation, based upon sound planning, Goggles feared the result would be "a hodgepodge, hit-and-miss--a shot in the dark" that would not be beneficial to the tribes.

One tourism-related project that is proceeding calls for the establishment of an Indian Cultural Heritage Center. The proposed facility would be located at Ft. Washakie.

While adopting a measured approach to economic development, Collins said "the economy is such that it provides motivation" for the tribal governments to be more responsive than may have been true in the past. But there are more positive factors as well. The tribes have some funds that can be invested. The tribes could receive Department of Defense contracting preferences, and if deemed appropriate, the reservation could be established as an "economic development zone," Collins said. Due to strong cultural and extended family ties, the work force is also stable in the sense that it is non-transient.

The relationship between the tribes and the Bureau of Indian Affairs (BIA) has also changed, according to Collins. "The BIA realized there are many things that can be better handled by the tribes," he said. At the same time, the tribal governments have recognized a responsibility for their own destinies.

"In the past, the status quo was let's call the BIA or ask the attorneys when something came up," Collins said. "Now, with the new people (in tribal government), we realized that the attorneys and the BIA haven't worked in our best interests."

Collins welcomed the diminishing BIA role in management matters. "We have a vested interest," he said. "The BIA doesn't. After 35 years of government service, you're set. For the tribes after 35 years, it's back to square one."

David Allison, superintendent of the Wind River Agency, Bureau of Indian Affairs (BIA), at Ft. Washakie, said since 1975 many functions have been turned over to tribal governments and even more options are available that the tribes could exercise. In essence, the BIA serves as a liaison between the tribes and the federal government, in addition to administering federal programs. The BIA is charged with protecting natural resources on the reservation and protecting tribal sovereignty. Another major function of the BIA is to ensure that incomes earned from trust properties are collected and properly disbursed. Any contract a tribe enters into which would require pledging trust assets must be approved by the Interior Department.

In terms of economic development, and with the exception of contract agreements that would require Interior Department approval, Allison said the tribal governments are pretty much free to chart their own course. "I think rightly so," he added. "I think in the past the bureau pushed tribes into economic developments that were not feasible."

During one period, the BIA pressed the notion of building motels on reservations. Several were built. "Very few of them are successful," Allison noted. "The rest are laid to waste." He contended it was much the better strategy that those who are going to invest the effort in a project should also advance the ideas. In such a case, he said, the BIA might play a useful supporting role, by processing loan or grant applications, by securing feasibility studies, and by developing business plans.

When per capita payments were running in the $500 range, "nobody thought too much about jobs," Allison said, but dropping oil prices forced some hard reassessments. First, he said, it became clear the tribes could not depend upon oil and gas forever. Many of the reservation fields are old and past their production primes. "I think the tribes are in a situation where they have got to start looking to the future," Allison said. "The reservation is no different than the state of Wyoming in general. They put all their eggs in one basket (with oil and gas). Somebody dropped the basket."

And second, Allison said, the rest of Fremont County has realized the importance of the reservation to the regional economy. Dropping per capita payments have meant less money available to be spent in communities such as Lander and Riverton.

A heightened realization of the importance of tribal spending has also accompanied reverses suffered elsewhere in the Fremont County economy during recent years. Such reverses have included greatly diminished uranium-mining activity and closure of the Atlantic City iron mine and mill. Linda Van Fleet, manager of the Lander Chamber of Commerce, likened the impact of tribal dollars on the Lander economy "as comparable to the miner dollars when they were here. The reservation dollar was just as important to the merchants as the miner-type dollar."

She said the establishment of more service and retail outlets on the reservation could pose real challenges to local businesses. "They (local business people) would have to go back and adjust their planning," she said, "because the Indian dollar does mean a lot to them in keeping their doors open."

Faced with difficult economic challenges, Van Fleet said she has seen the level of cooperation generally improve in Fremont County during her four-year tenure as chamber manager. A few Indians are actively involved in chamber activities, including the board of directors. In addition, she said, business groups in Lander and Riverton are working together, realizing that if a business decides to locate in either community, it benefits the whole county.

The diversity of Fremont County often makes it difficult to find a common focus for economic development, according to Alan O'Hashi, assistant to the mayor of Lander. What may be of interest to people in Dubois may not be of interest to people in Jeffrey City, or to people on the reservation. At the same time, O'Hashi did not like to single out the reservation. As residents of Fremont County, he said, it merely followed that persons on the reservation would have an impact on the local economy.

O'Hashi has pitched the notion of a centralized bidding clearing house for military procurement to the tribal councils. He obtained $15,000 from the State Economic Development and Stabilization Board in match money as part of a $30,000 feasibility study. The remainder would be invested by the tribes.

"They (the tribes) have been very philosophically positive on the project," O'Hashi said. "They tend to move rather conservatively, which is good." Principally, the tribes wanted a more extensive business plan, and better documentation of employment that would actually be created for the tribes before making a decision.

In terms of the future, several persons expressed optimism, although general improvements in the reservation economy are likely to occur slowly. Allison felt the reservation had the potential to develop beyond neighboring communities such as Lander. For one thing, he said, there was still considerable resistance to development off the reservation. The point may be approaching, he said, when there is less resistance to development on the reservation than there is off. In addition, the tribes still control substantial natural resources, including what are likely to be substantial water rights once pending claims are settled.

Goggles sees behind himself younger persons with ever-improving skills and educational levels. After going away to college, many don't return home to the reservation because there are few employment opportunities. He said the tribal governments have a responsibility to such persons that could be discharged by creating an environment more conducive to business activity.

"I really believe that it is going to take a good many years to develop that type of an atmosphere," Goggles said. "But I also think we are on the verge, the very brink, of opening new doors."

S. T. Mast, IPR

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Faltering Oil Strained Tribal Incomes

The importance of oil and gas activity to communities throughout Wyoming is well-documented. During 1985, more than a third of the state's assessed valuation was tied to oil activity. Perhaps no people in the state, however, have been more vulnerable to the changing fortunes of oil than the Arapahoes and Shoshones.

In an area where unemployment ranges as high as 80 percent, the per capita payment for many people on the Wind River Reservation has been the main source of personal income. The per capita payment is sometimes misinterpreted by non-Indians as a kind of welfare payment. Rather, such payments represent a distribution of tribal income to members of the tribe, much in the same way that a dividend might be paid to stockholders in a corporation, and are in keeping with the communal traditions of Indian society. The bulk of tribal income is derived from oil and gas royalties.

Fifteen percent of all tribal income is earmarked for the operations of tribal government. The other 85 percent is distributed on a per capita basis to the enrolled members of each tribe. Since tribal income is shared equally by the two tribes, rather than by individuals, the Shoshone per capita payments are somewhat higher than those made to enrolled Arapahoes--simply because there are fewer Shoshones. At present, there are approximately 3,700 enrolled Arapahoes and 3,000 enrolled Shoshones. Per capita payments are $150 per month for enrolled Shoshones and $100 per month for enrolled Arapahoes. To be an enrolled member of either tribe, various lineage requirements must be met, including at least one-fourth degree of Indian blood.

As oil prices plunged during 1986, the level of per capita payments was reduced from $300 per month for Shoshones and $200 per month for Arapahoes, to $150 and $100, respectively. The drops have had a major impact on the Bureau of Indian Affairs' General Assistance (GA) Program, according to Catherine Christiansen, supervisory social worker for the Wind River Agency, Ft. Washakie. The GA program is analogous to the Aid-to-Families-with Dependent-Children (AFDC) Program. However, the GA program applies to double heads of households, in recognition of the historically high unemployment on the reservation, and with the goal of keeping families together. The AFDC program applies only to single heads of households. The GA program also picks up persons who may be eligible for programs like AFDC during the time such persons await appointments or benefits, Christiansen said. As oil prices sank during 1986, the number of GA recipients rose dramatically, from only 191 in January 1986 to 1,762 in December 1986 (see Table 2). Total payments increased from $49,971 to $241,883 over the same period. The BIA expects to make GA payments of more than $2.6 million during fiscal 1987.

One reason for the increase in GA recipients during 1986 was that before the drop in oil prices, and consequently the reduction in per capita payments, Shoshones were not generally eligible for benefits, Christiansen said. The first $2,000 of per capita income for each individual is exempt from being counted as a resource toward federally funded programs. "Sometimes a single person would be eligible," she said, "but once you started getting more than one per capita in the family, they (Shoshones) were ineligible." The reductions, however, meant that all per capita payments were less than $2,000 per year, and thus, more people became eligible for GA or

Table 2: General Assistance Payments and Falling Oil Prices, 1986.

Month	Recipients[1]	Payments[1]	Oil Price*	Year Previous Oil Price*
Jan 1986	191	($) 49,971	($)25.55	($)25.80
Feb 1986	240	61,423	17.35	26.50
March 1986	279	66,585	12.25	27.75
April 1986	331	74,842	11.30	28.80
May 1986	562	149,281	13.80	27.35
June 1986	613	153,481	13.80	27.50
July 1986	783	174,646	12.40	26.90
Aug 1986	862	171,127	11.55	27.25
**Sept 1986	822	158,225	16.45	28.30
Oct 1986	970	205,396	15.15	29.25
Nov 1986	1,402	222,546	14.70	30.35
Dec 1986	1,762	241,883	15.30	29.75

*Reflects spot market prices of West Texas Intermediate grade on first trading day of each month.

**Data for only three weeks of the month.

[1] Source: Wind River Agency, Ft. Washakie, WY

AFDC benefits. With reductions in per capita payments, Christiansen said things may be approaching a point where GA and AFDC payments are the major sources of income on the reservation.

GA or AFDC recipients can also participate in the county's energy assistance program, as well as having the option of receiving food stamps or commodities from tribal programs. GA recipients must seek employment, but Christiansen admitted that the pickings are slim. "They are just doing it because we are requiring it," she said. "The reason we require it is so they don't totally give up hope."

Even with higher prices, the days when personal income on the reservation can rest upon per capita payments derived principally from oil and gas production appear to be numbered. Many of the major fields on the Wind River Reservation are old and past their production primes. The Lander Field (portions of which are off the reservation) was discovered in 1909. The Winkleman Field, which had 88 producing wells in 1985, was discovered in 1917. Maverick Springs (79 producing wells) was also discovered in 1917, while Circle Ridge (138 wells) was discovered in 1923. Steamboat Butte, a relative youngster among reservation fields, was discovered in 1943. Taken together, these five fields had a combined cumulative production of approximately 216 million barrels, accounting for 88 percent of the total cumulative production among all reservation fields producing in 1985.

Royalty payments to the tribes are handled in a manner similar to royalities garnered from state lands. Assuming a royality of 16 percent and 100 barrels of production, the royality payment would be equivalent to the value of 16 barrels of oil. Total production minus royalties yields total taxable production (Table 2). Taxable production is the unit upon which other taxes, such as severance taxes, are based.

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Table 3: Estimated Taxable Oil Production on Wind River Reservation, 1985.

Field(s)	Operator(s)	Taxable Production(bbls)	Taxable Valuation*
Circle Ridge	Conoco	404,600	($) 9,575,719
Lander Field	Amoco Production Co.	418,210	9,989,137
Maverick Springs	Marathon, Crown Central Petroleum, Conoco	248,415	5,861,954
Muddy Ridge	Tom Brown, Inc., Texaco Producing, Inc.	5,213	131,683
Pilot Butte	Brinkerhoff Co., Homestead Associates, Chevron U.S.A., Oklahoma Silurian Partners, John & Iva Tressler, V.T. Resources, Inc.	71,143	1,732,011
Riverton Dome, Riverton Dome East	Atlantic Richfield Co., Conoco, Inc.	80,130	2,201,519
Rolff Lake	Phillips Petroleum Co.	27,273	677,554
Sheldon Dome, South Sheldon Dome, Sheldon Dome NW	Atlantic Richfield Co., Brinkerhoff Co., Phillips Petroleum Co., Texaco Producing, Inc., Smith, Turner Assoc., Superior Oil Co.	85,243	2,253,921
Steamboat Butte	Brinkerhoff Co., Chevron U.S.A.	658,882	16,513,586
Winkleman Dome, Winkleman	Amoco Production Co.	1,282,006	28,268,533
	Total	3,281,175	($)77,205,617

*1986 valuation based on 1985 production.

Source: Ad Valorem Tax Division, Wyoming Department of Revenue and Taxation.

Life after Higher Education: Is the Future on the Reservation?

Higher education has been viewed by tribal councils in recent years as important means by which economic improvements can be achieved on the Wind River Reservation. And while Indian students at the University of Wyoming interviewed during the spring semester expressed a general desire to return to the reservation upon graduation, concerns were expressed with regard to the availability of appropriate opportunities.

Darrell Bell, a 20-year-old enrolled Shoshone majoring in finance, said he selected his major because business fields would be among the first skills required as the tribes strive to develop the reservation economy. If the tribes established something like a bank on the reservation, Bell said he would probably return to the reservation immediately upon graduation. Otherwise, "if it would work out better for me to go out on the outside and get job experience, then go back, I'd go that route," he said.

On the other hand, Joe Smith, Jr., a 29-year-old enrolled Arapaho graduating in business administration, said he had been interviewing for positions off the reservation. He saw few job prospects for people in his field on the reservation. "I worked in the tribal system for a while," he said, "and as far as advancement, it's limited."

Regina Ray, 23, who holds a B.A. in psychology and is working on a second bachelor's in elementary education, said although she wanted to be involved in Indian education at some level, she seriously doubts she will be able to work on the Wind River Reservation immediately. Given a choice, however, she would prefer working on the reservation. "I'm very involved with the movement in higher education," she said, "and I would give anything to help them reach that goal." Ray is an enrolled Shoshone.

Johnna Oberly, a 20-year-old sophomore, plans to attend law school after completing a degree in political science. She said she would like to return to the Wind River Reservation, but only if it could be financially justified. For the moment, she saw little prospect of practicing law on the reservation. Oberly, who is both Arapaho and Shoshone but is enrolled in the Comanche tribe of Oklahoma, said there may be better prospects in the Oklahoma tribal offices.

"You can go to work for a big corporation and make money and forget about the reservation," she said. "That's so easy to do. I've thought about it, I've thought about going back. You know, you have all this thing about they're sending you off to school and helping Indian people. That's great, but I'm looking out for myself, too."

Susan Snyder, 23, an enrolled Shoshone and college freshman majoring in management information systems, was hopeful a job in her field would be available on the reservation when she graduated. "They're just starting (economic development) right now," she said. If not, she said she would work elsewhere in her field until a job on the reservation turned up.

Ken Smith, 21, an enrolled Arapaho in his junior year of bioengineering pre-medicine, plans to attend medical school before returning to the reservation. "I really do want to go back to the Wind River Reservation and help in any way I can," he said. "There is a strong need for Indian doctors right now, and I would be an Indian doctor on my home reservation." Upon graduation from medical school, Smith felt a place would be made for him on the Wind River Reservation, probably with the Indian Health Service.

David Day, Jr., an enrolled Shoshone, was also optimistic about his job prospects on the reservation. The 27-year-old senior in anthropology said he plans to work for the tribes in cultural resource management. While he did not officially have a job, Day said "things are looking good once we get our own ordinance. There is a definite future." Day said activities in his field may not be as economically productive as some fields, but there was still money available now being paid to outside people.

"We might be able to do it ourselves," Day said. "The tribes are all for it."

S. T. Mast, IPR

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Tribes beyond Wyoming's Borders Have Impacts on the State

By virtue of the fact that the Wind River Reservation is located in Wyoming, it follows that the Arapahoes and Shoshones play the greatest roles of all Indian tribes in the economic and social life of the state. However, in some areas, land claims of the Sioux and the spending power of Crows and Northern Cheyennes cannot be ignored.

A bill introduced in the U.S. Senate by Sen. Bill Bradley (D-New Jersey) would convey federally held lands in the Black Hills to the Sioux Nation. Included in the transfer would be two traditional religious sites in Wyoming, Devil's Tower and Inyan Kara Mountain in Crook County.

While the claims may seem frivolous to some, they are based upon a series of treaties and legal interpretations that span more than 100 years. According to terms of the 1868 Treaty of Fort Laramie, the U.S. Government agreed to reserve the Black Hills for use by the Sioux. In exchange, the Sioux relinquished their rights to lands outside the reservation. When gold was discovered in the Black Hills, however, white settlers flocked to the area. U.S. troops were withdrawn, thus allowing open settlement without respect to the integrity of the Sioux claim.

In 1876, Congress enacted a law declaring that no subsistence funds would be appropriated to the Sioux unless they gave up their claim to the Black Hills. A commission from Washington was sent to the Black Hills and succeeded in gaining the acquiescence of 10 percent of the adult male Sioux to relinquish any claim to the Black Hills. However, the Treaty of Fort Laramie stipulated that 75 percent of the adult male Sioux must agree in order for such a treaty to be valid. Despite this, Congress enacted the commission agreement into law in 1877. But the Sioux claim to the Black Hills was never extinguished.

During the next century, the Sioux Nation continued to press its claim for the Black Hills. In 1920, the Court of Claims was given jurisdiction over the dispute. In 1942, the Court of Claims ruled that the 1920 act giving it jurisdiction did not also give it the authority to question whether the 1877 law afforded just compensation. In 1943, the U.S. Supreme Court refused to review the Court of Claims decision.

In 1946, the Indian Claims Commission Act was passed and the Sioux claim with respect to the Black Hills was re-examined. In 1954, the Indian Claims Commission ruled that the Sioux had not proved their case, a decision that was affirmed by the Court of Claims. In 1958, however, the case was reopened on the grounds that the Sioux case had not been adequately presented.

In 1968, the Indian Claims Commission focused the case on three issues; the extent of the lands acquired by the U.S. Government in 1877; the nature of the consideration; and if consideration was absent, whether there had been any payment by the United States. In 1974, the Indian Claims Commission ruled that compensation was owed the Sioux for the Black Hills.

In 1978, Congress provided a basis for the Court of Claims to review Fifth Amendment issues surrounding the case, upon which the awarding of interest depended. In 1979, the Court of Claims reaffirmed that a taking had been affected. In 1980, the U.S. Supreme Court upheld the Court of Claims decision. The Sioux received a judgment of $17.1 million for the value of land taken by the act of 1877, $3,484 for rights of way, $450,000 for damages resulting from gold removal prior to the act, and 5 percent simple interest, for a total award of more than $105 million. The sum was appropriated on July 18, 1980. The same day, the Oglala Sioux filed a claim for possession of the Black Hills, plus monetary damages. The Sioux Nation thus rejected the monetary award and resolved no money would be accepted in exchange for the extinguishment of title to the Black Hills.

The Bradley bill attempts to finally put the land claim to rest by creating a "re-establishment area" for the Sioux Nation. While most of the federal land in question is located in South Dakota, the bill makes a special provision so that "religious sites and ceremonial sites outside of the re-establishment area...including Devil's Tower and the Inyan Kara Mountain area, shall be included in the Sioux Park."

Lands of the Sioux Park, according the bill, would "remain equally accessible to all persons, both Sioux and non-Sioux, under such rules and regulations as the Sioux may from time to time establish and publish." As religious and ceremonial sites, however, both Devil's Tower and Inyan Kara Mountain could be closed to public access:"...such lands within the Sioux Park which are traditional religious or ceremonial sites shall be identified by the Sioux and shall be excluded from public access to the extent necessary to preserve their primary religious uses and integrity," declares the bill.

For a transitional period of five years, the National Park Service and the Sioux Nation would jointly manage the Sioux Park. Under the larger claim involving the Black Hills region of South Dakota, a Black Hills Sioux Forest would be established.

The effect of the re-establishment effort, in the words of the Bradley bill, would be to "further the interests of the United States to enter into a just and honorable Sioux Nation Black Hills lands settlement, recognizing and reaffirming its domestic and international commitments to Sioux Nation self-determination, economic security, religious freedom, and acknowledging the traditional and historical belief of the Sioux in the sacred character of the Earth and in the Black Hills in particular, as well as their rights to freely exercise such beliefs."

Montana's Crow Indian Reservation is located immediately north of the Wyoming stateline, roughly between Sheridan and Lovell. The Crow Reservation is joined to the east by the smaller Northern Cheyenne Reservation. The reservations are located in part within the service orbit of Sheridan, Wyoming, and in part within the orbits of Hardin and Billings, Montana.

Inquiries made to such agencies as the Bureau of Indian Affairs, the Bureau of Reclamation, the Crow tribal offices, and the Sheridan County Economic Development Council revealed an absence of precise data related to economic impacts of reservation spending in surrounding communities. But like Wyoming's Wind River Reservation, there is a general absence of business activity on the Crow Reservation. Thus, persons on the reservation turn to other communities for goods and services. Robert Howe, assistant manager of Crow tribal programs, said persons living in the northwestern part of the reservation probably shop most in Hardin and Billings, while persons in the southeastern portion probably shop in Sheridan. Since the population is greater in the northwestern portion of the reservation, it would follow that the effects of reservation spending would be most pronounced in the Montana communities, he said. Approximately 10,000 persons live on the Crow Reservation, including 5,000 enrolled members of the Crow tribe.

While the impacts of spending in Wyoming by persons from the Crow and Northern Cheyenne reservations are difficult to quantify, Sheridan Chamber of Commerce Director Norma Nichols felt the impacts were fairly substantial, especially in such areas as lodgings, restaurants, and medical services. The most prominent example is the Thunder Child Treatment Center, a chemical dependency program located in Sheridan. The in-patient program averages 25 beds per day, with an average stay of 25 days. The program is oriented toward Indian persons, primarily from the Northern Cheyenne and Crow tribes. Taking into account "community generator" multiplier effects, the program under the current budget accounts for $1.2 million in the Sheridan economy and provides 26 jobs, according to Terry Beartusk, the center's executive director. Under the new budget, those figures will swell to $5.6 million and 75 jobs.

Working contacts between the Crow and Northern Cheyenne tribes on the one hand, and the Sheridan business community on the other, are virtually non-existent. Beartusk, a Northern Cheyenne, said he often "scolds" his non-Indian business associates for their apparent lack of interest in the reservations. For one thing, Beartusk sees an "awaking" on the reservations as power shifts from the conservative "Old Guard" to younger, more educated persons committed to economic development. Communities near the reservations could both benefit from and contribute to such efforts, he said.

But in order to take advantage of the emerging situation, the business community must be prepared. At present, Beartusk said reservation dollars are apt to flow toward Billings because "Sheridan has had a bad reputation among the Indian community for being racist" and nothing has been done to counteract that image. The result of inaction at this stage will be missed business opportunities in the years ahead: "People are going to be caught unaware," he warned, and business will be lost to others who have cultivated the contacts.

In terms of current planning, Beartusk criticized local economic development groups for focusing on tourism while ignoring the Crow and Northern Cheyenne reservations.

"We've got tourism and we've got tourism," he concluded. "And here we are, sitting adjacent to a potential gold mine."

S. T. Mast, IPR

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ECONOMIC CHANGES

ECONOMIC CHANGES

(Editor's note: The purpose of this section is to point out areas of the Wyoming economy in which noteworthy changes occurred, or in which existing trends were significantly accentuated, during the latest reporting period.)

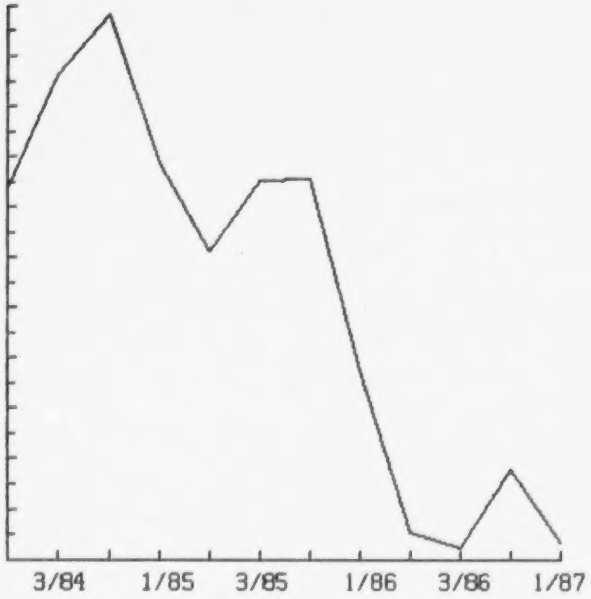
Statistics related to the labor force, oil production, and construction are among the highlights recorded in the Update's first quarter 1987 figures.

Employment figures reflected the general slowness in the Wyoming economy. The unemployment rate rose to a 12-quarter high level of 10.7 percent during the first quarter, up from 8.6 percent in the fourth quarter of 1986. At the same time, both the number of employed persons and the size of the civilian labor force shrank to 12-quarter lows. Employment was off more than 7,000 from the level attained in the first quarter of 1986.

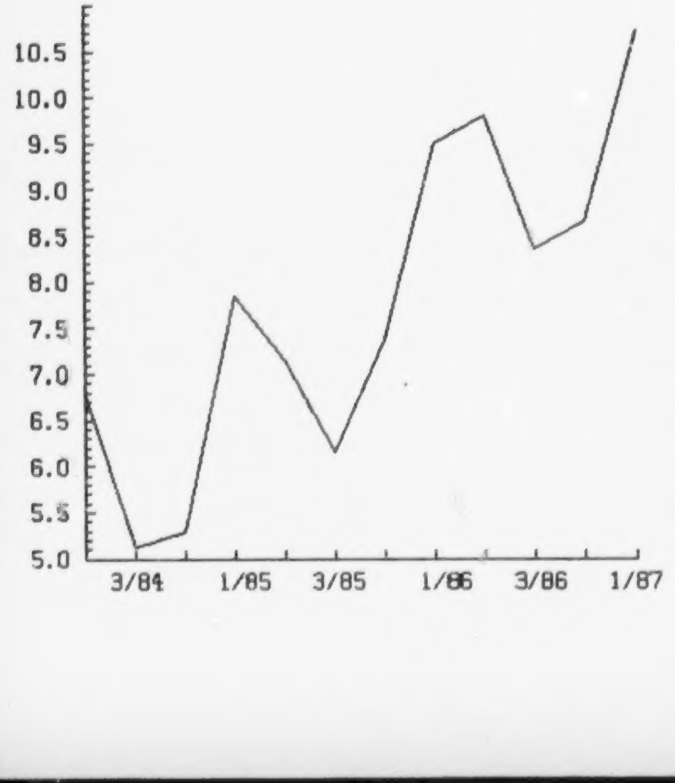
The active rig count continued at a low ebb, averaging just 23 rigs during the first quarter of 1987. This compares with an average of 57 active rigs during the first quarter of 1986 and 99 rigs during the first quarter of 1985. At the same time, daily Wyoming oil production was only 322,000 barrels, a 12-quarter low.

Construction indicators also reflected slackness in activity. The number of new residential dwelling units dropped to 270, a 12-quarter low. This compares with 389 recorded during the first quarter of 1986. Twelve-quarter lows were also registered in the value of residential dwellings constructed, the value of nonresidential construction, and the number of building permits issued in selected Wyoming cities.

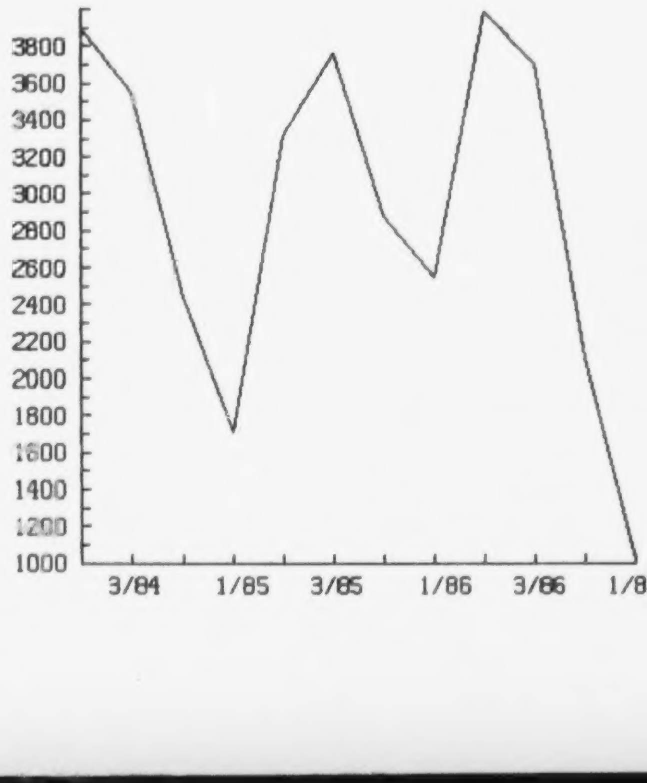
Active Rig Count



Unemployment Rate



Building Permits Issued



WYOMING
DATA

Table 4: Agriculture[1]

Calendar Quarters	2/84	3/84	4/84	1/85	2/85	3/85	4/85	1/86	2/86	3/86	4/86	1/87
1. Timber Cut in Wyoming National Forests (MBF)	7625.	48671.	63055.	23591.	6564.	35705.	57834.	27236.	10067.	10867.	42510.	47783.
Price Indices[2] (1967=100)												
2. Wyoming Crops, Prices Received-Latest	265.	254.	255.	257.	260.	256.	270.	260.	240.	213.	208.	205.
3. Wyoming Crops, Prices Received-Average	270.	255.	253.	254.	259.	260.	267.	262.	252.	225.	212.	205.
4. U.S. Crops, Prices Received-Latest	276.	260.	240.	246.	236.	216.	226.	213.	212.	184.	191.	194.
5. U.S. Crops, Prices Received-Average	275.	271.	251.	243.	239.	224.	219.	214.	217.	193.	191.	190.
6. Wyoming, All Commodities, Prices Received-Latest	242.	254.	248.	253.	243.	242.	234.	242.	239.	248.	238.	264.
7. Wyoming, All Commodities, Prices Received-Average	250.	246.	249.	254.	253.	237.	243.	236.	246.	241.	244.	253.
8. U.S., All Commodities, Prices Received-Latest	262.	252.	247.	246.	235.	219.	234.	222.	221.	223.	221.	223.
9. U.S., All Commodities, Prices Received-Average	264.	259.	249.	247.	237.	225.	230.	223.	222.	226.	223.	221.
10. Wyoming Livestock, Prices Received-Latest	235.	254.	246.	252.	238.	238.	223.	237.	238.	258.	246.	282.
11. Wyoming Livestock, Prices Received-Average	243.	244.	247.	254.	250.	230.	236.	228.	244.	245.	253.	267.
12. U.S. Livestock, Prices Received-Latest	251.	247.	253.	246.	235.	222.	243.	230.	230.	257.	248.	249.
13. U.S. Livestock, Prices Received-Average	256.	251.	249.	251.	236.	227.	240.	232.	228.	255.	252.	249.
14. Prices Paid by U.S. Farmers-Average	336.	334.	332.	332.	332.	329.	329.	330.	324.[3]	326.	324.	327.

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[1] First time readers of WQU should refer to the "Format" page (in back) for an explanation of abbreviations and table formats.
[2] The index for the last month (latest) of each quarter, along with the average of the three monthly indices of each quarter.
[3] This figure is for the month of April. This index is now reported in the months of January, April, July, and October.

Sources: Series 1: United States Forest Service. "Timber Cut and Sold, Convertible Products." Region 2 and 4 reports published quarterly.
Series 2-15: Wyoming Crop and Livestock Reporting Service. Bi-weekly Ag Statistics.

Table 5: Banking and Finance

Calendar Quarters	2/84	3/84	4/84	1/85	2/85	3/85	4/85	1/86	2/86	3/86	4/86	1/87
1. Total Bank Loans and Leases Financing Receivables (T$)	2359492.	2368731.	2352704.	2356267.	2348277.	2296857.	2226477.	2173437.	2108551.	2066324.	2003375.	INA
2. Total Bank Deposits (T$)	3812354.	3790977.	4005456.	3808654.	3908435.	3959810.	4048702.	3908134.	3797038.	3787785.	3912276.	INA
3. Total Non Interest-Bearing Deposits (T$)	734297.	723344.	742392.	652223.	643908.	687128.	689811.	624421.	620064.	611410.	638317.	INA
4. Savings and Loan Mortgage Loans (T$)[1]	775396.	771560.	806660.	780644.	806897.	949722.	929668.	826697.	817750.	811230.	787910.	INA
5. Savings and Loan Deposits (T$)	1087036.	1111213.	1142593.	1161848.	1193339.	1183564.	1166220.	1139851.	1137374.	1137155.	1148406.	746318.
6. Prime Interest Rate[3]	12.60	12.97	11.06	10.50	9.78	9.50	9.50	9.10	8.50	7.50	7.50	7.50

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[1] Only members of the Federal Home Loan Bank Board are included. Indicates amount at the end of the quarter.

[2] Rate is for the last available month of the quarter.

Sources: Series 1-3: Wyoming State Bank Examiner Quarterly Report.
Series 4 and 5: Federal Home Loan Bank of Seattle, Monthly Report. Comparative statistical analysis of member institutions.
Series 6: U.S. Department of Commerce, Bureau of Economic Analysis. Survey of Current Business. Published Monthly.

Table 6: Business Conditions

Calendar Quarters	2/84	3/84	4/84	1/85	2/85	3/85	4/85	1/86	2/86	3/86	4/86	1/87
1. New Domestic Corporations	359.	332.	273.	308.	307.	248.	283.	308.	301.	262.	307.	256.
2. New Foreign Corporations	249.	259.	244.	224.	259.	279.	217.	251.	223.	189.	217.	206.
3. Total New Corporations	608.	591.	517.	532.	566.	527.	500.	559.	524.	451.	524.	462.
4. Business Failures	64.	67.	68.	70.	78.	58.	72.	74.	83.	89.	64.	47.
5. Value of Business Failures ($)	14081414.	11774068.	12763251.	-25485776.[1]	23761569.	-2394988.[1]	8266910.	-933393.[1]	-2898465.	7242872.	12405831.	2935220.
6. Personal Bankruptcies	166.	169.	183.	176.	204.	229.	211.	238.	321.	288.	340.	333.

[1] Assets exceed liabilities.

Sources: Series 1-3: Secretary of State. New and Foreign Corporations. Monthly report.
Series 4-6: Cheyenne Credit Bureau. Wyoming bankruptcy cases, business failures, and value of failures. Weekly publication.

Table 7: Construction

Calendar Quarters	2/84	3/84	4/84	1/85	2/85	3/85	4/85	1/86	2/86	3/86	4/86	1/87
1. New Residential Dwelling Units	935.	642.	368.	380.	670.	628.	535.	389.	394.	508.	317.	270.
2. Value of Residential Dwellings Constructed (M$)	54.4	37.9	23.0	24.3	46.8	42.3	35.4	20.9	24.8	33.7	21.6	17.6
3. Value of Nonresidential Construction (M$)	30.6	36.9	80.0	33.0	75.8	32.1	17.1	14.2	33.8	50.3	9.2	6.8
4. Building Permits Issued in Selected Wyoming Cities	3892.	3546.	2438.	1713.	3315.	3753.	2872.	2547.	3979.	2698.	2112.	1015.
5. Value of Authorized Construction (T$)	42320.	36344.	35282.	23474.	83920.	193451.	15695.	21484.	49454.	38669.	20453.	9083.
6. Mortgage Interest Rate[1]	11.61	12.03	12.05	11.42	11.31	10.69	10.47	10.01	9.74	9.74	9.43	9.02[2]

[1] Conventional first mortgage for new home purchase. U.S. average for last month of quarter.

Sources: Series 1-3: F.W. Dodge Division of McGraw-Hill. "Dodge Local Construction Potentials." Published monthly.
Series 4-5: Institute for Policy Research. "Local Construction Reports." Survey of authorized construction in selected cities conducted monthly.
Series 6: U.S. Department of Commerce, Bureau of Economic Analysis. Survey of Current Business. Published monthly.

[2] This data is the U.S. average for January and February 1987.

Table 8: Consumers

Calendar Quarters	2/84	3/84	4/84	1/85	2/85	3/85	4/85	1/86	2/86	3/86	4/86	1/87
1. New Truck Registrations	4418.	4102.	4574.	3581.	4052.	5187.	3915.	3343.	3650.	3951.	2993.	2253.
2. New Car Registrations	3741.	3676.	3397.	3012.	3752.	4868.	3177.	3200.	3804.	4181.	2784.	2211.
3. Wyoming Personal Income (M$)	6240.	6332.	6373.	6419.	6623.	6639.	6704.	6894.	7075.	6675.	INA	INA
4. US Disposable Income (B$)	2554.	2606.	2724.	2739.	2818.	2800.	2846.	2935.	2979.	2980.	2993.	2030.
5. US Personal Income (M$)	2985650.	3053166.	3107659.	3156982.	3193455.	3207892.	3268061.	3304609.	3483300.	3506300.	3527900.	INA
6. Latest US Consumer[1] Price Index (1967=100)	306.2	312.1	312.2	315.3	318.7	320.5	323.4	321.4	323.0	324.9	325.7	327.7
7. Quarter's Average US CPI	305.2	310.0	312.1	313.9	317.7	319.7	322.4	323.0	321.6	327.1	325.7	327.7[2]
8. Liquor Sales (T$)	7478.	8180.	9554.	6360.	7538.	8931.	9526.	6293.	7500.	8334.	8811.	5421.

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[1] Number shown is for the last month of the quarter. CPI shown is the index for wage earners and clerical workers, not the CPI-U. Beginning with the data for January, 1985, the index is affected by a change in methodology used to compute the homeownership component.

[2] This figure is for the month of January.

Sources: Series 1-2: R.L. Polk and Company Motor Statistical Division. "National New Vehicle Registration Service." Published monthly.
Series 3,5: U.S. Department of Commerce, Bureau of Economic Analysis. Survey of Current Business. Published quarterly.
Series 4,6,7: U.S. Department of Commerce, Bureau of Economic Analysis. Survey of Current Business. Published monthly.
Series 8: Wyoming Liquor Commission. Sales data are reported to IPR.

Table 9: Employment and Labor[1]

Calendar Quarters	2/84	3/84	4/84	1/85	2/85	3/85	4/85	1/86	2/86	3/86	4/86	1/87
1. Civilian Labor Force	258507.	261039.	249652.	242092.	256819.	266519.	246570.	248020.	257190.	257544.	247051.	239055.
2. Employment	240970.	247678.	236455.	223081.	238436.	250115.	228368.	220575.	231996.	236026.	225690.	213415.
3. Unemployment	17537.	13360.	13197.	19011.	18383.	16403.	18203.	23135.	25194.	21518.	21361.	25640.
4. Unemployment Rate	6.8	5.1	5.3	7.9	7.2	6.2	7.4	9.5	9.8	8.4	8.6	10.7
5. Initial Claims Filed	7271.	5255.	8237.	13108.	8047.	6991.	12467.	15095.	13146.	11710.	14560.	13392.
6. Applications Received	11541.	11375.	9685.	11106.	12017.	11424.	11347.	14321.	14968.	13057.	10542.	10013.
7. New Non-Agricultural Openings	9779.	12905.	8655.	7004.	11450.	12640.	9685.	7059.	10595.	10997.	7408.	4872.
8. New Non-Agricultural Placements	9111.	10348.	8331.	6308.	9594.	9656.	9163.	6348.	8490.	8869.	7149.	4182.
9. Miners' Average Weekly Hours	43.2	42.9	43.5	41.4	43.9	43.3	44.2	43.0	41.9	41.6	41.7	42.2
10. Miners' Average Weekly Pay ($)	558.70	552.01	572.47	570.76	591.54	574.69	573.99	529.41	520.39	541.10	569.14	539.90
11. Miners' Average Hourly Wage ($)	12.94	12.87	13.16	13.79	11.94	13.27	13.00	12.30	12.42	13.00	13.66	12.79

[1] The most recent year's data are preliminary.

Sources: Series 1-11: Wyoming Employment Security Commission. Labor Force Trends. Published monthly.

Table 10: Energy and Mineral Production

Calendar Quarters	2/84	3/84	4/84	1/85	2/85	3/85	4/85	1/86	2/86	3/86	4/86	1/87
1. Wyoming Coal (TST)	28964.	31806.	34908.	36243.	34690.	35264.	31177.	34323.	29421.	32685.	35979.	36762.
2. U.S. Coal (TST)	223657.	246163.	188471.	220652.	223817.	225369.	220701.	226592.	214567.	216695.	223892.	217546.
3. Wyoming Oil (TBPD)	325.	350.	338.	333.	334.	352.	347.	340.	334.	334.	333.	322.
4. U.S. Oil (TBPD)	8831.	8879.	8942.	8877.	8974.	8915.	8960.	9052.	8851.	8725.	8585.	8364.
5. Wyoming Natural Gas (MMCFD)[1]	1376.	1285.	1417.	1601.	1297.	1201.	1348.	1245.	1373.	1293.	2021.	INA
6. U.S. Natural Gas (MMCFD)	49076.	47968.	49888.	51347.	45317.	44400.	47757.	48251.	44326.	43457.	46823.	INA
7. Active Rig Counts in Wyoming-Average	93.	116.	128.	99.	81.	95.	96.	57.	25.	22.	38.	23.

[1] Beginning with fourth quarter 1986, Wyoming gas includes carbon dioxide production.

Sources: Series 1,2,5, and 6: U.S. Department of Energy. Energy Data Reports. Gas data are from Natural Gas Monthly, and the Wyoming Oil & Gas Conservation Commission. Coal data are published weekly.
Series 3-4: The Oil and Gas Journal. U.S. and Wyoming Oil Production published weekly.
Series 7: Petroleum Information Corporation, Hughes Tool Company. Monthly Average Active Rig Counts in Wyoming.

Table 11: Government

Calendar Quarters	2/84	3/84	4/84	1/85	2/85	3/85	4/85	1/86	2/86	3/86	4/86	1/87
1. Sales and Use Tax Collections (T$)	51151.	57132.	59570.	54966.	50917.	63025.	65957.	53816.	47695.	55716.	36042.	39867.
2. Violent Crime[1]	318.	350.	334.	304.	275.	350.	319.	292.	380.	374.	269.	299.
3. Nonviolent Crime[2]	4486.	4790.	4170.	4170.	4969.	5120.	4212.	4294.	5485.	5265.	4294.	3955.
4. Stolen Property (T$)	2627.	2856.	2487.	2244.	2437.	3443.	2447.	2529.	3713.	2420.	2222.	1880.
5. Stolen Property Recovery Rate	42.9	51.5	45.5	51.9	38.5	51.6	41.0	34.2	54.0	38.6	31.0	41.4
6. Percent of Crimes Cleared[3]	22.4	22.9	30.7	28.3	24.0	25.1	28.9	28.2	24.7	25.2	36.4	32.0

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[1] Murder, negligent homicide, forcible rape, robbery, aggravated assault.

[2] Burglary, larceny, auto theft.

[3] Clearance of a crime indicates resolution of a complaint by arrest or other extraordinary means.

Sources: Series 1: Wyoming Department of Revenue and Taxation, Sales and Use Tax Division. "Net Collections by Business Class by County." Published monthly.

Series 2-6: Uniform Crime Reporting Center for Criminal Justice Research, Division of Criminal Identification, Office of the State Attorney General. "Crime in Wyoming." Published quarterly.

Table 12: Tourism

Calendar Quarters	2/84	3/84	4/84	1/85	2/85	3/85	4/85	1/86	2/86	3/86	4/86	1/87
Visitors, National Parks and Monuments												
1. Yellowstone	536765.	1561475.	100802.	66776.	592059.	1500133.	103487.	79077.	607923.	1593749.	124314.	75835.
2. Grand Teton	522640.	1373523.	206891.	130583.	517614.	1299635.	181840.	138794.	530991.	1314373.	196051.	141570.
3. Devil's Tower	72461.	131447.	15145.	8841.	68885.	135061.	12157.	9237.	86167.	186134.	16610.	8523.
4. Fossil Butte	4246.	9107.	1762.	115.	4254.	10434.	1213.	205.	4367.	10105.	1152.	282.
5. Fort Laramie	27529.	54704.	5527.	2625.	26185.	49165.	3921.	2027.	28120.	52465.	3863.	1305.
6. Big Horn NRA-South[1]	45104.	67403.	26388.	31533.	56612.	77495.	46073.	18574.	53634.	65696.	40878.	22056.
Other Tourism Indicators												
7. Traffic Count (Avg. # of Vehicles/Day)	125371.	169579.	101625.	88135.	131520.	166903.	98463.	90397.	119613.	147829.	91685.	78349.
8. Hotel, Motel, and Camp Sales Tax (T$)	1084.	2178.	1389.	932.	1070.	2136.	1370.	862.	1185.	2205.	1364.	928.
9. Gasoline Sales (TGL)	85891.	102748.	77108.	66798.	83529.	101676.	74304.	62891.	76603.	95902.	68488.	INA

[1] Big Horn Canyon N.R.A. is only partially in Wyoming. Only visitation for the Wyoming part is shown.

Sources: Series 1-6: Monthly visitor use reports of the National Park Service.
Series 7: Traffic Survey Unit - Planning Branch, Wyoming State Highway Department. "Selected Recording Stations Traffic Counter Data." Published monthly.
Series 8: Wyoming Department of Revenue and Taxation. "Sales and Use Tax Summary by County by SIC Major and Minor." Reported monthly.
Series 9: Petroleum Association of Wyoming. Monthly Gasoline Gallonage Report.

Table 13: Utilities[1]

Calendar Quarters	2/84	3/84	4/84	1/85	2/85	3/85	4/85	1/86	2/86	3/86	4/86	1/87
1. Residential Electric Connections	179536.	178837.	179123.	179451.	181034.	179423.	179609.	179931.	179179.	177718.	177613.	177091.
2. Residential Electric Consumption (TKWH)	437086.	359496.	484523.	542962.	395900.	348469.	510291.	502703.	342033.	300186.	408558.	476965.
3. Commercial Electric Connections	32462.	32874.	32738.	33058.	33730.	33782.	33603.	33606.	33885.	33786.	33880.	33355.
4. Commercial Electric Consumption (TKWH)	437983.	455181.	468378.	504376.	474481.	497271.	512748.	499198.	425035.	418211.	486495.	438712.
5. Industrial Electric Connections	3150.	3122.	3059.	2957.	2926.	2933.	2872.	2927.	2811.	2884.	2655.	2989.
6. Industrial Electric Consumption (TKWH)	1911229.	2049121.	2479998.	1572877.	1904448.	2159299.	2626516.	1514740.	1313271.	1452583.	1708946.	1718924.
7. Other Connections[2]	3155.	3438.	3165.	2916.	3145.	3219.	3112.	3451.	3285.	3317.	3030.	2801.
8. Other Consumption (TKWH)	13775.	50031.	10385.	5321.	19238.	57385.	10970.	11110.	41061.	66445.	55088.	47998.
9. Residential Natural Gas Connections	75081.	74802.	75736.	76112.	75456.	74772.	75826.	76146.	75383.	74548.	75188.	75206.
10. Residential Natural Gas Consumption (MCF)	2409528.	792447.	2896230.	4569541.	2018115.	776733.	3018677.	3860776.	1833160.	1013300.	2661644.	3840399.
11. Commercial Natural Gas Connections	6817.	6770.	6859.	6882.	6785.	6651.	6737.	10926.	6651.	6545.	6623.	6652.
12. Commercial Natural Gas Consumption (MCF)	1142885.	406462.	1299535.	2099624.	959449.	399430.	1389474.	1890077.	1760704.	398174.	1125927.	1687452.
13. Industrial Natural Gas Connections	95.	96.	93.	91.	92.	96.	93.	91.	91.	91.	95.	98.
14. Industrial Natural Gas Consumption (MCF)	4163212.	4837885.	5250938.	3191574.	2380289.	2328525.	3060300.	2914089.	1885998.	1309870.	1770920.	1129556.
15. Other Natural Gas Connections	46.	46.	46.	46.	47.	42.	42.	42.	40.	38.	37.	37.
16. Other Natural Gas Consumption (MCF)	944.	5893.	355.	209.	1805.	8039.	221.	216.	1136.	5478.	132.	170.

---

[1] Some small utilities do not report, hence the data are slightly less than actual state totals. The data are consistent. The same utilities' reports are included in each figure.

[2] "Other" includes agriculture, municipal, and other public.

Sources: Series 1-16: Reports to IPR by selected electric and natural gas utility companies. Survey conducted monthly.

Average Rents by City, Fourth Quarter 1986*

City	Apartment	Trailer Lot	House	Mobile Home
Cheyenne	$336.99	132.00	431.38	281.80
Buffalo	267.67	106.25	297.73	234.75
Casper	256.01	146.33	351.28	238.49
Cody	287.08	130.00	394.04	277.59
Douglas	307.00	120.00	366.11	256.25
Evanston	328.03	183.00	409.51	349.36
Gillette	289.87	175.00	415.10	295.38
Greybull	209.29	76.50	234.46	212.50
Jackson	352.50	113.75	431.08	326.25
Kemmerer	322.50	135.00	377.50	335.00
Laramie	305.63	128.25	360.11	263.25
Lusk	254.17	90.00	239.00	272.62
Newcastle	284.33	81.67	262.33	212.50
Pinedale	337.08	150.00	382.14	325.00
Rawlins	240.17	122.50	300.74	222.27
Riverton	255.73	113.75	303.24	232.14
Rock Springs	317.21	160.38	433.73	330.54
Sheridan	261.52	130.00	312.99	245.83
Sundance	251.43	80.00	307.50	212.50
Thermopolis	285.91	130.00	275.63	253.67
Torrington	226.43	70.00	291.92	200.00
Wheatland	239.38	88.75	260.50	291.67
Worland	260.88	100.00	281.84	278.08

---

*Prepared by Research and Statistics, Department of Administration and Fiscal Control.

Wyoming Comparative Cost of Living Index (January 7-9, 1987): Statewide Average = 100

City	Rank	All items	Food	Housing	Apparel	Transportation	Medical	Reccare
Jackson	1	111.68	96.72	127.92	97.75	105.40	99.96	107.86
Pinedale	2	109.34	101.19	118.89	108.58	104.69	103.80	103.89
Kemmerer	3	105.66	101.04	115.09	99.58	99.01	102.91	99.40
Gillette	4	105.64	101.97	114.82	86.65	100.22	106.39	100.00
Evanston	5	105.63	94.93	115.20	97.37	105.00	100.22	99.97
Rock Springs	6	104.40	97.71	114.19	104.19	97.35	96.89	101.11
Cheyenne	7	103.42	99.79	111.09	103.06	97.20	98.77	98.96
Cody	8	102.24	107.43	101.39	103.62	101.10	96.13	101.56
Sundance	9	101.85	109.43	98.32	95.91	102.45	103.36	101.67
Douglas	10	101.63	104.09	101.09	103.76	98.98	104.95	101.51
Casper	11	100.67	98.59	98.79	98.62	104.96	106.08	99.93
Sheridan	12	100.31	105.02	98.20	97.91	99.91	104.39	99.05
Laramie	13	100.27	97.84	102.37	96.73	100.29	96.03	101.28
Rawlins	14	98.36	100.96	95.12	98.86	100.89	102.09	97.56
Buffalo	15	97.07	100.17	92.20	111.47	98.76	95.02	99.44
Thermopolis	16	96.73	102.11	92.32	104.18	97.36	94.83	98.85
Newcastle	17	96.61	105.28	88.20	104.45	97.08	101.89	102.39
Wheatland	18	96.33	100.40	91.04	94.44	100.90	98.70	97.75
Riverton	19	96.28	95.57	92.30	89.65	102.92	101.82	97.61
Lusk	20	94.90	100.99	85.15	104.31	100.48	97.35	100.57
Lander	21	94.62	97.12	91.26	94.84	96.01	102.41	94.39
Worland	22	94.59	96.01	91.60	103.81	95.39	97.08	95.03
Greybull	23	91.37	93.00	80.97	105.86	98.44	95.64	100.22
Torrington	24	90.41	92.62	82.47	94.40	95.20	93.28	100.02

Source: Research and Statistics, Wyoming Department of Administration and Fiscal Control.

Format

For data available at least quarterly, the last 12 quarters are printed in WQU. In this edition, published series begin with the 2nd quarter of 1984, and end with the 1st quarter of 1987. For other data series (primarily annual), the most recent observations, up to 12, are published in WQU. Most annual data series will reappear in WQU only when updated, or about every fourth issue. Quarters are calendar quarters. For example, the 3rd quarter is composed of July, August, and September. In the table headings and narratives, a particular quarter will be indicated by notation such as 2/82 (2nd quarter, 1982), 1/82 (1st quarter, 1982), and so on.

Beside each data series name is an abbreviation in parentheses. The abbreviation indicates the units (such as dollars, tons, feet, miles, etc.) of the data. The key to the units abbreviations is below.

Throughout WQU, all data are for the state unless otherwise stated. The most recent year's data should be viewed as preliminary, due to revisions. The acronymn "INA" signifies that information is not available.

The reader should be attentive to the footnotes at the bottom of pages, particularly those accompanying a data table. The footnotes help the reader to properly interpret the data, and they also indicate when more detailed (by subject or by area) data than that which is shown is available from IPR. A list of sources follows the footnotes.

Key to Units Abbreviations

MBF - Thousand Board Feet

KWH - Kilowatt Hours

TKWH - Thousand Kilowatt Hours

$ - Dollars

H$ - Hundreds of Dollars

T$ - Thousands of Dollars

M$ - Millions of Dollars

B$ - Billions of Dollars

GL - Gallons

TGL - Thousands of Gallons

ST - Short Tons

HST - Hundreds of Short Tons

TST - Thousands of Short Tons

$/ST - Dollars Per Short Ton

HBBL - Hundreds of Barrels

TBPD - Thousands of Barrels Per Day

MCF - Thousands of Cubic Feet

HMCF - Hundreds of MCF Per Day

MMCFD - Million Cubic Feet Per Day

1970 1980

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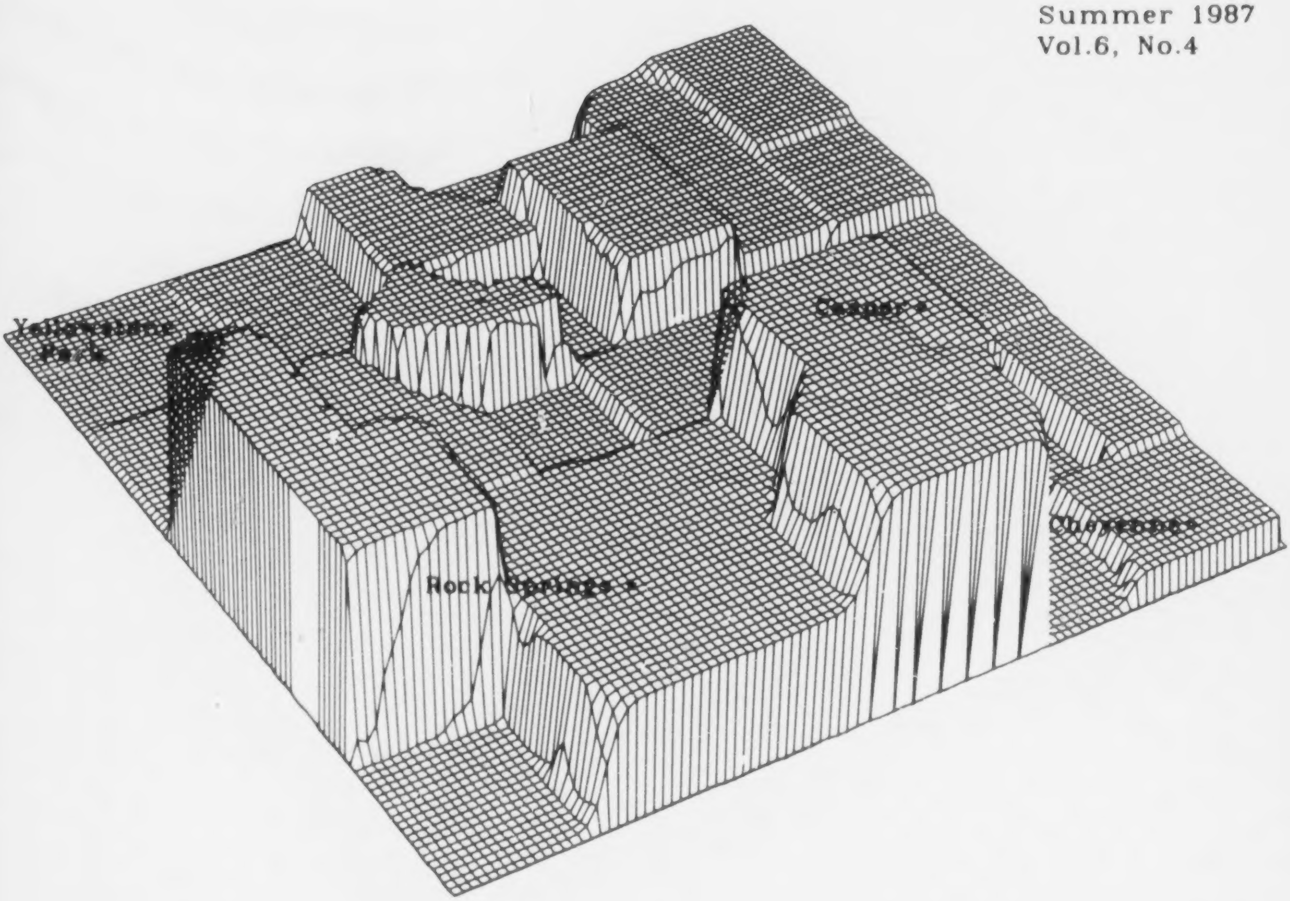
WYOMING QUARTERLY UPDATE

Summer 1987
Vol.6, No.4



Sales and Use Tax Summary by County
Percent Loss in Tax Dollars June 1987 vs June 1986

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INSTITUTE FOR POLICY RESEARCH
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UNIVERSITY OF WYOMING

Wyoming Quarterly Update

Wyoming Quarterly Update (WQU) represents the efforts of the Institute for Policy Research (IPR) at the University of Wyoming to provide improved data access services. The data presented in WQU are assembled from secondary sources, such as government agencies and private industry. The staff of IPR greatly appreciates the ongoing, cheerful cooperation of each of the data sources listed in the bibliography.

WQU provides current indicators and timely, easily accessible data. Most of the data published in WQU are updated quarterly with the most current numbers. The complete data sets from which WQU originates are maintained, together with documentation by IPR. Readers are encouraged to contact IPR to find out how to gain access to data which do not appear in the WQU. Many data series, such as gasoline sales and taxation data, span more than 30 years. Numerous other series cover 20 years or more.

Efforts to expand the subject and geographic detail (county data) of data sets will be made continuously.

The cover of each edition features a contour map illustrating the geographic distribution of a particular variable. This edition presents a contour map depicting county losses in revenue from sales and use taxes. The map represents percentage loss in sales and use tax dollars for June 1987 as compared to June 1986. Four counties experienced a percentage gain in tax dollars: Albany (+22.4%), Fremont (+6.8%), Sheridan (+ 1.8%), and Uinta (+ 16.8%). These counties are depicted at zero on the contour map.

First-time readers of WQU should refer to the "format" explanations on page 48 for keys on how best to use and interpret data presented in this publication.

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WYOMING
SCENE

Summer Minerals Outlook

OVERVIEW

The impact of lowered mineral values was evident late in the second quarter when the Wyoming Revenue Department noted that mineral valuations were down about $2 billion from last year. Statewide mineral valuations for oil, natural gas, coal, uranium, and trona dropped from $5.4 billion in 1986 to $3.4 billion in 1987. Most of the decrease was related to the three largest mineral industries in Wyoming--oil, natural gas, and coal. For 1988, there is some cautious optimism that the valuation of oil will increase since posted prices of Wyoming Sweet crude were approaching $20 per barrel, and might reach that price by early August. The prices paid for natural gas and coal, however, were still declining at the end of the second quarter although some observers feel that prices may have bottomed out.

With increasing prices, the oil industry showed some signs of rallying at the end of the second quarter. Growing rig counts were indicating that counts might go into the 40's or higher by the third quarter. While a long way from the boom times earlier in the decade, any optimism had been hard to find until recently.

There is also some good news for the uranium industry. Several uranium companies in the State announced that they were hiring. A mill came back on line and two in situ operations moved ahead with evaluation studies of their properties.

Seasonal gold activity was definitely up in the South Pass mining district as well as other areas of the State. There were some nuggets up to one inch in length recovered in placer claims.

In regard to other minerals, some beet sugar companies are examining Wyoming limestone deposits and plan test burns later in the year.

Gary B. Glass, State Geologist
Geological Survey of Wyoming

OIL AND GAS UPDATE

During the second quarter of the year the average posted price of Wyoming Sweet crude has increased to $19.00 a barrel. This is an increase of $1.75 over the maximum price of Wyoming Sweet last quarter. Oil futures on the New York Mercantile Exchange closed at a price of $20.06 a barrel on June 15, for July delivery of West Texas Intermediate crude oil. Wyoming Sweet generally sells for about the same price as West Texas Intermediate, so there is some hope that Wyoming crude oil prices may break the $20 barrier in the near future. The last time average postings for Wyoming Sweet were this high was February 1986. The 1987 prices are a marked improvement over April 1986, when average postings were $12.50 a barrel. Unfortunately, the rise in prices over the past several months is not the result of a sound national energy policy, but is mainly due to OPEC'S adherence to a production agreement by member countries and to increased tension in the Persian Gulf region. The increased prices, however, will probably stimulate some additional drilling, and possibly oil production for 1987 will remain near that of 1986.

Another positive sign for Wyoming's petroleum industry is the trend in average monthly rig count. Although the averages for April, May, and June of 1987 are not that much different than the averages for those months in 1986, the basic trend for 1987 shows a small but steady increase in the average count since the end of February. The basic trend for 1986 was a tremendous drop starting in February and a rebound starting in October. It appears that drilling has started to increase earlier this year than in past years, and 40 to 50 rigs may be working in the State in the not too distant future if prices remain stable or increase. In a related note, Amoco Production Company has announced plans to drill 64 development wells and seven or eight exploratory wells in Wyoming. However, 40 of the development wells will be shallow wells, around 2,000 feet deep, in Salt Creek Field.

There has also been an increase in seismic crews at work in the United States. The count in April was up 14 from March and the count gained two more in May. April's gain of 14 crews was the largest monthly increase in nearly two years. However, the average count of 158 crews for the first five months of 1987 is still well below the average of 248 for the first five months of 1986.

Sun Exploration and Production Company recently estimated proved recoverable reserves of 30 million barrels of oil equivalent in their Luckey Ditch Field, discovered in mid-1985, and one of the best discoveries in the Rocky Mountain region in several years.

In an item related to the Luckey Ditch Field, the Bureau of Land Management's (BLM's) June lease sale drew high bids totaling $6,436,196 for 25,668 acres. The average bid was $250.75 per acre. Five Luckey Ditch area tracts located just west and north of Sun's current development program drew the five highest bids of the sale and totaled nearly $4.8 million. Anadarko Petroleum made the sales's high bid of $6,550 per acre for a 120-acre tract in section 5, T.12N., R.114W. Texaco, Inc. made the second and third highest bids of the sale. They bid $4,442 per acre for a 620.93-acre lease in section 7, T.12N., R.114W. and $4,290 per acre for an 80-acre lease in section 33, T.13N., R.114W. Texaco's high bids for these two leases totaled over $3.1 million. The fourth and fifth highest per-acre bids were made by Exxon, Incorporated for two leases totaling

274.58 acres in sections 12 and 13, T.12N., R.115W. Exxon offered $3.277 per acre for each of these leases. Donald C. Slawson made the sale's sixth highest bid of $1,061 an acre for an 80-acre Powder River Basin lease in section 11, T.48N., R.70W. The tract is just west of a Minnelusa oil well in Fish Field, which was completed earlier this year. In this sale, 121 of 123 tracts received bids and 29 of the tracts got bids of over $100 per acre. This sale generated more revenue than any sale since August 1984.

The BLM's April sale drew high bids of $779,821 for leases on 16,214 acres, and 68 of the 95 tracts received bids. The top bid of $332 per acre was made by Exxon, Incorporated for an 80-acre lease in section 1, T.13N., R.121W., located in the Overthrust Belt about a half mile west of Nugget production in Bessie Bottom Field. A 280-acre tract in section 25, T.39N., R.76W. in the Powder River Basin got the sales's second highest bid. Corbin J. Robertson bid $304.50 per acre for this tract. The total revenue generated by the first three BLM sales has already surpassed the 1986 total for six sales.

The Wyoming Board of Land Commissioners' May sale had high bids of $416,108 on 34,111 acres. The average bid was $12.20 per acre. Both the total revenue and the average price per acre are the highest since the July 1986 sale. Almar Petroleum Land Services, Incorporated made the sale's top bid of $260 per acre for a 320-acre tract in the Powder River Basin in section 36, T.36N., R.75W., about three miles from the Blizzard Field discovery. Only three tracts in this sale drew bids of $100 or more.

Sun Exploration and Production recently made another significant discovery in Wyoming, this time in the Wind River Basin. The 1 Sun Ranch-Federal was tested on a 25/64-inch choke and has been completed as a discovery in the Muddy Sandstone flowing 1,048 barrels of 33.6 degree oil and 976 MCF of gas per day. The discovery well is just over one mile northwest of two Muddy Sandstone producers in North Grieve Field, but Sun's pressure analyses indicated that the discovery well was in a separate reservoir.

Todd Resources recently completed the third producer in the Wall Creek Sandstone of the Frontier Formation in Rock River Field on the northwestern flank of the Laramie Basin. The field was discovered in 1918 by Marathon, and the main production of over 38 million barrels has come from deeper formations. Todd's 2-35 Harrison-Cooper well in section 35, T.20N., R.78W. pumped 128 barrels of 39.5 degree oil and 24 MCF of gas per day with no water. The well is updip from two Marathon Wall Creek wells in sections 34 and 35, T.20N., R.78W. Todd has 1,600 acres under lease in the area, and a spokesman for the company said that as many as 25 new locations are possible on their leases.

Hawk Point Field continues to grow as Exxon, Incorporated completed a north offset in section 19, T.47N., R.72W., pumping 820 barrels of 37.3 degree oil and 164 MCF of gas per day from the Minnelusa Formation. Total Petroleum's discovery well for the field in Section 30, R.47N., R.72W. was completed last year for an initial flowing potential of 754 barrels of oil and 115 MCF of gas per day. Total has completed four more producing wells in the field since their discovery, and Exxon has completed two others and plans at least four more Minnelusa tests in the area. March production from the field was over 68,000 barrels of oil and nearly 11 million cubic feet of gas. With one or two more good development wells, Hawk Point Field should become one of Wyoming's 25 largest oil fields.

Lario Oil and Gas has completed a Minnelusa discovery northeast of Gillette in section 36, T.52N., R.69W., pumping 104 barrels of 22 degree oil with 3 MCF of gas and one barrel of water per day. The company also swabbed 180 barrels of oil, 416 barrels of water, and 9 barrels of sediment and water during a Minnelusa test southeast of Gillette in section 22, T.48N., R.69W. The prospective discovery is west of Raven Creek Field and southeast of Pickrel Field, both Minnelusa producers.

The proposed Kern River pipeline project was once again in the news this quarter. Governor Mike Sullivan said that he is considering low-interest State loans for the project. The pipeline is one of two remaining in the running to deliver 700 million cubic feet of gas per day to southern California. The Kern River pipeline would get at least half of the gas from Wyoming, while the rival Mojave pipeline would get the gas from Texas. The California Public Utilities Commission has further complicated matters by arguing that no gas pipeline is necessary. The Federal Energy Regulatory Commission will make a ruling on the proposals in September. State Oil and Gas Supervisor Don Basko has estimated that it would require 70 additional drilling rigs in Wyoming to maintain gas reserves for the pipeline and that benefits to the State would include an extra $45 million per year in taxes as well as an economic boost, especially for southwest Wyoming.

The Interior Department's Mineral Management Service (MMS) has proposed to lower federal gas royalties retroactively and thereby forgive at least $100 million in royalty underpayments. Gas royalties were not officially lowered until July of 1986, but the MMS wants to lower the royalties as of January 1, 1983. If the proposal becomes effective, Wyoming could end up owing gas producers several million dollars. In addition, the State would not be able to collect some $12 million that was underpaid between 1983 and July of 1986. The Indian tribes in Wyoming would also be adversely affected if the proposal is adopted.

The U.S. House of Representatives voted in June to bar the purchase of most federal oil shale claims. Federal oil shale claims totaling 54,400 acres in Lincoln County, Wyoming, are affected by the bill. Present law does not require claim holders to develop their claims for oil shale and allows them to gain title for $2.50 per acre by filing for a patent. The new bill would require claim holders to convert their claims to 20-year leases or to develop the oil shale if they are to retain them.

The University of Wyoming's Enhanced Oil Recovery Institute held its third annual symposium in Casper, May 13-14, with representation from universities, industry, and government. The dominant theme seemed to be that tertiary recovery techniques can be used to recover hundreds of millions of barrels of oil in Wyoming fields, however, they are not going to be implemented to any great degree until economic conditions become more favorable.

In a related item, a University of Wyoming professor has formed a company, Carbon Recovery Technology Inc. (CRT), which plans to remove carbon dioxide (CO_2) from flue gas released from power plants. The CO_2 would then be dried and compressed for pipeline delivery to oil companies and used for tertiary recovery. CRT would like to build a demonstration project at the Dave Johnston Power Plant near Glenrock, which is close to a number of oil fields in the Powder River Basin that are prime candidates for enhanced recovery.

Rodney H. DeBruin,
Petroleum Geologist
Geological Survey of Wyoming

COAL UPDATE

Coal deliveries for the first quarter of 1987 were about 0.4 million tons less than those made for the same period a year ago. If the remaining three quarters of deliveries continue as in 1986, Wyoming's coal production will probably be about the same as it was in 1986, although it is too early to see any real trends developing. The difference in first quarter deliveries is that spot coal sales were 0.5 million tons less in the first quarter of 1987 than in the first quarter of 1986; contract sales in the first quarter of 1987 were actually 0.1 million tons more than those in the first quarter of 1986. With prices for Powder River Basin spot coal reportedly near $3.00 per ton F.O.B. the mine, spot coal sales are expected to increase substantially the next three quarters of 1987.

Statistics on the production of electricity and fuel consumption at electric utility plants in the United States during 1986 recently became available. Overall, electrical demand in the United States increased 0.8 percent in 1986. While the amount of electricity generated by coal decreased from 56.8 percent in 1985 to 55.6 percent in 1986 and the amount of electricity generated from natural gas also decreased (accounting for ten percent of the Nation's total), the amount of electricity generated by oil, nuclear fuel, and hydroelectric plants all increased. Oil accounted for five percent of the Nation's total electricity generation, nuclear fuel accounted for 17 percent, and hydroelectric plants accounted for 12 percent. Although coal still supplied over half the fuel to electric utility companies (with deliveries up almost three percent in 1986 -- the highest level in five years), the use of oil by electric companies increased more than 36 percent (the largest percentage increase since the 1973 Arab oil embargo), and the use of nuclear fuel increased eight percent.

Statistics on the distribution of coal produced in the United States in 1986 also became available (Energy Information Administration, 1987). Of the 889.8 million tons of coal distributed last year, 808.4 million tons, or 90 percent, went to U.S. consumers; the remainder of the coal was exported. About 85 percent of this 808.4 million tons of coal was shipped to electric utility plants. The state that consumed the most coal was Texas (79 million tons), followed by Ohio (61.6 million tons), Pennsylvania (53 million tons), and Indiana (50.4 million tons). Wyoming coal mines accounted for almost 17 percent of the coal used by domestic consumers in 1986 and about 19 percent of the coal supplied to the electric utility market.

Coal produced from Wyoming mines in 1986 was used in 25 states. Five states each consumed over ten million tons of Wyoming coal. For the fourth consecutive year, Texas consumed the largest amount of Wyoming coal; however, consumption of Wyoming coal at Texas utilities was down almost 18 percent over 1985's record year. Although most of the states consuming Wyoming coal did use less coal in 1986, Minnesota and Wisconsin increased their use of Wyoming coal. Four states consumed over 50 percent of Wyoming's coal and eight states consumed almost 80 percent of Wyoming's coal.

Electric utility companies located in 18 different states used nearly 98 percent of Wyoming's total coal production in 1986 to fuel steam-electric generating plants. The other seven states that consumed Wyoming coal used it primarily to fuel industrial boilers and secondarily to provide residential/commercial heating. About 1.9 million tons of the 3.1 million tons in the "other industrial" and "residential/commercial" categories went to Wyoming users. Most of this coal was used by other mineral-related industries in the State, including the trona, bentonite, and cement industries. Additional coal was used at FMC Corporation's formcoke plant in Lincoln County (which converts noncoking subbituminous coal to formcoke through the company's patented process), and by sugar beet processing plants. Although 85 percent of Wyoming's coal was shipped to out-of-state consumers, a small amount of coal (38,500 tons) was imported into the State from producers in Colorado, Utah, Montana, and Pennsylvania.

Transportation of Wyoming coal in 1986 was primarily by rail (92 percent); coal transported by river refers to coal that was delivered to its final destination by river barge (after originating on a railroad). Coal shipments on the Burlington Northern Railroad (BN) were 6.1 million tons less than in 1985; accordingly, the percentage of the State's coal shipped by BN dropped from 76 percent in 1985 to 72.5 percent in 1986. Western Railroad Properties, Incorporated (WRPI), which reports tonnages carried bythe Chicago and North Western (C&NW)/Union Pacific (UP) joint-venture railroad, increased their coal shipments by almost five million tons in 1986. The Union Pacific Railroad Company, serving mines in southern and western Wyoming, recorded a slight decrease in coal shipments in 1986.

In 1986, 1.2 million coal cars were loaded with 122.1 million tons of Wyoming coal. Of this total, about 7.3 million tons of coal were unloaded at in-state power plants; the remainder of the coal was transported out-of-state via coal unit trains. In 1986, coal accounted for 92 percent of the total tonnage of the railroad freight that originated in Wyoming. Incidentally, over 99 percent of the railroad freight carried in 1986 was related to the State's mineral industry, including (along with coal) nonmetallic minerals; chemicals and allied products; petroleum and coal products; and stone, clay, and glass products.

In other transportation news, C&NW announced in May that the eight contracts they signed in 1986 would increase the amount of coal they would haul out of the Powder River Basin to 33 million tons in 1987. C&NW currently operates an average of 16 coal unit trains per day into and out of the basin. Commonwealth Edison (CE), an Illinois electric utility company, recently announced that they had signed four ten-year transportation contracts with BN for coal haulage from Powder River Basin mines in Wyoming and Montana. Although Big Horn Coal Company's contract with CE is due to expire in 1988, CE announced that they would continue to take a small amount of coal from the Big Horn Mine after the contract ended.

In the second quarter of 1986, several developments concerning Wyoming coal are notable. First, Amax Coal Company announced construction of a $20 million coal drying facility at their Belle Ayr Mine south of Gillette. Although many companies in the Powder River Basin have experimented with coal drying techniques to increase the Btu content of the coals by removing part of the moisture in the coal, this is the first commercial sized plant in the basin. Amax expects to upgrade 8,300 Btu/pound coal to 10,790 Btu/pound coal by removing about two-thirds of the moisture present in the coal. Production of one million tons of upgraded coal annually is expected by 1989. If this plant is successful, many other mines in the State with low Btu coal could be forced to install coal drying facilities to compete for the higher Btu coal markets.

The second development occurred in southern Wyoming when Wyoming Coalbrik, Incorporated announced their intent to start construction of a $2 million plant (subject to availability of funding) to manufacture coal bricks at Rawlins. The plant would use low-sulfur coal from the Hanna Basin to make 7 1/2-pound coal bricks that have a heat content equal to 25 pounds of firewood.

A third development occurred in May when Pacific Power and Light Company (PP&L) announced that they would conduct a year-long test burn of eastern Powder River Basin coal at their Dave Johnston Power Plant at Glenrock. The test burn, which was scheduled to begin on June first of this year, will use 20,000 tons of coal per month from Mobile Coal Producing, Incorporated's Caballo Rojo Mine south of Gillette. The coal would be trucked 130 miles from the mine to the plant by Savage Coal Service's Coal Corporation of Salt Lake City, Utah. Although coal production will continue at Glenrock Coal Company's Dave Johnston Mine north of the power plant, PP&L hopes to double the life of the Dave Johnston Mine by purchasing supplemental coal elsewhere. If the test burn is successful and the supplemental coal is determined to be competitive in price with coal produced at the Dave Johnston Mine, PP&L will purchase supplemental coal for their Wyodak; Jim Bridger; Centralia, Washington; and Colstrip, Montana, power plants.

Several new contracts and coal sales were announced in the second quarter of 1987. The purchase of 0.6 million tons of spot coal from Mobile Coal Producing, Incorporated's Caballo Rojo Mine was recently announced by Omaha Public Power District (OPPD). Although Carter Mining Company renegotiated a long-term contract with OPPD in March, 1987, the utility needs the additional spot coal at their Nebraska City, Nebraska, power station and expects this additional coal to meet their spot coal requirements for the remainder of 1987.

A seven-year, 140,000-ton per year coal contract was announced between Rochelle Coal Company, which operates the newly-opened Rochelle Coal Mine in southern Campbell County, and the city of Ames, Iowa. This contract will replace the utility's current contract with Fort Union Coal Company in July of this year. A transportation contract was also signed with C&NW for hauling this coal from the Rochelle Mine to the Ames Municipal Power Plant. Burlington Northern's transportation contract to haul coal from the Fort Union Mine to Ames will also end in July.

Rochelle Coal Company also signed a ten-year contract with Applied Energy Services of Arlington, Virginia, to supply up to 1.5 million tons of coal per year to a 320-megawatt cogeneration plant located in Shady Point, Oklahoma. The coal will supplement Oklahoma coal as fuel for the plant, and new circulating fluidized-bed technology will be used in the plant's boiler design. Oklahoma Gas and Electric will purchase power from this plant, and Burlington Northern will transport the coal from Wyoming.

In southern Wyoming, Arch Mineral Corporation may be selling spot coal to Kansas Power and Light Company after their current contract expires at the end of the year. Evidently, the price of spot coal offered by Arch was significantly lower than the current contract price. It is believed that the tax break enacted by the Wyoming Legislature in early 1987, which places a cap on the amount of severance tax paid on a ton of coal, was a factor in the lowered price of coal from Arch's Seminoe No. 2 Mine near Hanna.

Finally, Pacific Power and Light Company (PP&L) and Wyodak Resources Development Corporation recently concluded contract negotiations for coal supplies to PP&L's Wyodak generating plant east of Gillette. The contract talks followed PP&L's recent decision to postpone indefinitely the construction of a second unit at the Wyodak plant. Wyodak released PP&L from a 35-year, 40-million ton contract for this proposed second unit and extended their existing coal supply contract for Unit 1 from 25 to 35 years. Prices on the existing 1.2-million-ton per year contract were increased by $1.25 per ton to offset the loss of the contract for Unit 2.

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Richard W. Jones, Coal Geologist
Geological Survey of Wyoming

METALS AND PRECIOUS STONES UPDATE

Gold exploration activity in Wyoming has picked up substantially with the recent rises in the price of gold. In the South Pass greenstone belt at the southern tip of the Wind River Range, placers are being worked in many drainages including Meadow Gulch, Rock Creek, and Wilson Bar (see Hausel, 1980, for locations and descriptions of these placers). Some successes are being reported, and nuggets up to one inch in length have been recovered.

A group of samples recently collected in the South Pass region and assayed for gold by the Geological Survey of Wyoming produced the following results:

Sample Number	Sample Description	Gold (ppm)[1]
MD-1-87	Quartz-rich iron formation collected northeast of Atlantic City Mine.	ND[2]
MD-2-87	Iron formation collected northeast of Atlantic City Mine.	ND
MD-4-87	Limonite-stained iron formation from prospect pit northeast of Atlantic City Mine.	ND
MD-5-87	Silicified breccia in chlorite schist (E 1/2 sec. 36, T.30N., R.99W.).	ND
MD-6-87	Milky quartz vein stained with hematite collected from prospect pit in greenstones (sec. 31, T.30N., R.99W.).	2.39
MD-8-87	Quartz boudin stained with copper and limonite in greenstones (sec. 31, T.30N., R.99W.).	4.53
MD-10-87	Grab sample of quartz and hematite from dump (sec. 31, T.30N., R.99W.).	ND
MD-11-87	Milky quartz collected from dump in sec. 31, T.30N., R.99W. The quartz is hosted by metagreywacke.	0.05
LOUL-1-87	Talc-chlorite schist collected adjacent to Atlantic City Iron Mill.	ND
LOUL-3-87	Cumulus-textured (?) peridotite collected adjacent to Atlantic City Mill.	ND
LOUL-4-87	Iron formation sample collected adjacent to Atlantic City Iron Mill.	ND

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[1] Parts per million

[2] ND = not detected

At the Carissa Mine near the western edge of the South Pass-Atlantic City district, the McKinney Resources and Carissa Gold Mines joint venture is presently dewatering the mine workings and doing some construction work on the surface. The present exploration is designed to determine the potential for large-tonnage, low-grade gold deposits.

The historic mining at the Carissa followed narrow (5 to 15 feet) high-grade shear zones in metagreywacke. However, the mine may also have low-grade resources tied up in the fractured wall rock. Last year, the Geological Survey of Wyoming collected a 30-foot composite chip sample in the fractured wall rock north of the Carissa shear. One split of this sample assayed 2.4 ppm (0.07 ounce/ton) gold.

Follow-up samples were taken over a 97-foot width with the following assay results:

Sample description	Gold (ppm)
0 to 10 feet north of the Carissa shear	0.4
10 to 20 feet north of the Carissa shear	1.05
20 to 37 feet north of the Carissa shear	2.5
0 to 10 feet south of the Carissa shear	0.65
10 to 20 feet south of the Carissa shear	0.25
20 to 30 feet south of the Carissa shear	0.30
30 to 60 feet south of the Carissa shear	0.35
Composite sample (97 feet)	0.50

In another development, a group from Riverton has scheduled some work on the historic Tabor Grand Mine near Atlantic City.

The Geological Survey of Wyoming is continuing with a long-term mapping project of the greenstone belt with the mapping of the Miners Delight Quadrangle. The Survey is also scheduling a detailed sampling project of several of the mines in the belt.

Some preliminary exploration for gold was reported in the Bear Lodge alkalic complex in the Bear Lodge Mountains of northeastern Wyoming and in the Hartville uplift of eastern Wyoming. In the Medicine Bow Mountains and Sierra Madre of southeastern Wyoming, some placer gold prospecting was reported as well as exploration for platinum by major mining companies.

W. Dan Hausel, Deputy Director,
Geological Survey of Wyoming

INDUSTRIAL MINERALS AND URANIUM UPDATE

Uranium

For the first time in six years, employment in Wyoming's uranium industry is increasing. Twenty rehirings for the startup of the Lucky Mc Mill (COGEMA) in the Gas Hills, and new hirings for Malapai Resources' Irigary Ranch and Everest Minerals' Highland in situ projects will increase employment in the industry.

The Lucky Mc Mill was restarted June 3, 1987, following a two-year shutdown for major renovation. The mill now has a capacity of 2,800 tons of ore per day. Pathfinder Mines, now 100-percent owned by the French company COGEMA, is milling ore from the Shirley Basin Mine. The mill is, however, operating at greatly reduced capacity.

Both in situ operations, Malapai Resources (Arizona Public Service) and Everest Minerals, continue to test their in situ recovery rates. Both have announced supply contracts beginning in 1988.

U.S. Energy Corporation of Riverton is trying to interest other mining and mineral companies in a partnership or joint venture to develop a mine on the south side of Green Mountain, in Fremont County near the Crooks Gap district south of Jeffrey City. U.S. Energy has developed plans for an underground mine on their property.

The renewed activity is due to several factors. Domestic uranium production has fallen to around 13 million pounds per year, while domestic uranium consumption is steady at under 40 million pounds per year (as fuel for nuclear power plants). Domestic uranium that can be produced at $25.00 per pound or less may be able to compete with foreign uranium, given certain transportation cost differences. The spot market price of uranium is $17.00 per pound. There is some hope that it will rise as uncertainties about nuclear power, which have arisen as a result of the Chernobyl Power Plant meltdown and a failure to establish import restrictions (quotas or tariffs) on foreign uranium, are resolved.

In Wyoming, the question of how to dispose of uranium mill tailings, located at the abandoned former Susquehanna-Western Mill near Riverton, has been resolved. The U. S. Department of Energy agreed to move the tailings to a disposal site in an abandoned open pit uranium mine in the Gas Hills. This was the method favored by the Wyoming Department of Environmental Quality. The removal of the tailings is scheduled to begin July 15. Bids have been let, but the contractor for the removal has not been announced. The entire project will cost about $24 million.

Trona

Trona production continues at the same pace as last year. A record 13,264,747 tons of trona were processed in Wyoming in 1986. Trona companies continue to search for export markets while the domestic glass and sodium chemical industries, the major consumers of Wyoming soda ash (refined trona), cut back production. Wyoming produces over 90 percent of the United States' soda ash, the rest coming from recent saline lake deposits in California. Wyoming's deposits are 45-million-year-old buried saline lake deposits in the Green River Basin west of Green River. The current export market accounts for 25 percent of all domestically produced soda ash.

Japan represents the greatest potential for export sales of soda ash. They have a demand for over one million tons of soda ash per year. They manufacture soda ash synthetically, which costs more than Wyoming mined and refined soda ash, including transportation costs. Recently, the Federal government has been putting pressure on Japan to allow more domestic soda ash imports as one means of easing the trade imbalance. Wyoming's Congressional Delegation has also been trying to work on the trade restrictions.

Meanwhile, 21 jobs were cut by General Chemical Company's Green River soda ash plant in April. General has been cutting back since January. They now have 153 employees, down from 174 in January.

Unless exports rise dramatically, there is still little chance for any accelerated growth for the trona industry, according to A. F. Zeller of Chemical Mineral Marketing Services. Zeller sees production remaining steady since the lowering demand of flat glass is being balanced by slightly increasing exports.

A British company, Imperial Chemical Industries (ICI), is in the process of buying Stauffer Chemical Company. They plan to divest themselves of the soda ash production in Wyoming. ICI does plan to keep the agricultural chemicals division of Stauffer, including the Leefe, Wyoming, phosphate plant (see Phosphate).

Bonneville Transloaders, Inc.

Wyoming's largest ton-mile trucking firm is Bonneville Transloaders, Inc. (BTI), which hauls one product -- soda ash -- from the trona mines west of Green River to Bonneville, north of Shoshoni. At Bonneville, the trucks are unloaded and the soda ash is transferred to railroad cars. In this way, the Burlington Northern Railroad competes with the Union Pacific Railroad in the trona hauling business. BTI employs about 100 drivers, maintenance workers, and others, and depends on the Burlington Northern Railroad for income. BTI has been in operation since 1985, and will continue to operate as long as the Burlington Northern ships trona at a rate competitive with Union Pacific's.

Bentonite

Wyoming's bentonite industry continues to struggle along at greatly reduced production rates. Production in 1986 was 31.4 percent below 1985 production. Bentonite is used primarily as drilling mud, by an industry that is suffering due to drastically decreased domestic exploration rates for oil and gas. Bentonite production today is less than half of the high rates of 1981-1982. In contrast to other Wyoming operations, the bentonite industry has not closed down. Only one plant, N.L. Baroid's Lovell plant has closed since 1982. Employment is down, but not proportionately to production.

Limestone

Divide Construction, which operates the Lost Day quarry north of Fort Laramie, won the bid to supply Basin Electric's Laramie River Power Plant near Wheatland with high-quality limestone for burn control. The source of this limestone is immediately north of the Lost Day quarry.

Limestone for sugarbeet refining at Western Sugar's Scottsbluff and Mitchell, Nebraska, sugarbeet refining plants will be supplied from a Western Sugar quarry at Warren, Montana, north of Frannie, Wyoming. Although transportation costs have been cited as the greatest expense for sugar rock, this long rail haul is apparently cost-effective. This source is more distant than Pringle, South Dakota, the former source. Wyoming limestone deposits are located closer than either the Montana or south Dakota sources. Due to efforts by the Geological Survey of Wyoming, Western Sugar and Holly Sugar in Torrington will conduct burn tests on Wyoming limestone this fall.

Mountain States Cement applied for a permit to quarry limestone from a new area south of Laramie near the old limestone source and close to their cement plant.

Phosphate

Phosphate produced at the two Wyoming phosphate plants, Stauffer at Leefe, west of Kemmerer, and Chevron, southeast of Rock Springs, is becoming more in demand. Phosphate rock mined in Idaho and Utah supplies these plants. Phosphate consumption was greater than production in 1986. Most Wyoming phosphate is used in fertilizer.

The fate of the Leefe plant is unclear as Stauffer Chemical Company was purchased by Imperial Chemical Industries (ICI) of Great

Britain. ICI wishes to keep the agricultural related parts of Stauffer, which would include phosphate production. So far, no changes have been made at the Leefe plant.

Sulfur

Despite optimistic predictions, the price of sulfur fell in 1986 as consumption declined. Apparently Canadian stockpiles were not being depleted as fast as predicted, and the predicted sulfur shortage did not occur. Prices will probably rise in the future, however, with the inevitable depletion of the Canadian sulfur deposits.

Wyoming produces sulfur as a by-product from the desulfurization of natural gas and petroleum at several locations. A natural deposit near Thermopolis is also being tested for mining.

Other Industrial Minerals

Mountain States Cement is testing a gypsum deposit fifteen miles south of Laramie. Their existing gypsum source is 40 haul-miles from the plant. Mountain States uses gypsum to mix with lime and marl to produce cement.

Mountain States Cement is also testing a new marl (impure limestone) deposit south of their plant. Their old quarry west of Laramie has been mined out.

A permit to quarry ornamental stone from an area east of Superior was denied by the Environmental Quality Council last year, and recently this decision was upheld by the Wyoming Supreme Court. The U.S. Bureau of Land Management is now seeking to ban all mining in that area, known as the "natural corrals", an eroded area with cliffs and walls of weathered wyomingite and orendite (potassium-rich volcanic rocks). Other locations of these rocks have been mined for pumice in the past and may be suitable for ornamental stone.

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Ray E. Harris
Industrial Minerals and
Uranium Geologist,
Geological Survey of Wyoming

Agricultural Outlook

As we move into the fall of 1987, agriculture appears to be entering smoother waters. The signs are mounting that the industry's six-year-old recession has fully bottomed. Land values are firming, farm income is record high, and farm lenders report fewer loan problems. Even commodity markets appear to have a new lease on life, as livestock prices have strengthened noticeably and grain prices are somewhat higher than a year ago. Still the nagging surpluses of the 1980's remain.

Farm income is strong due to record farm program payments, reduced farm expenses, and a rebounding livestock industry. Net cash income (gross cash receipts for the sector less gross cash expenses) is expected to move to a record high in 1988. The industry appears to have settled on a broad plateau--a time when it may not decline much further, thanks to government programs, but it may not improve markedly either, due to the sorry state of our export markets.

Farm land values are showing some surprising firmness this spring. At the end of 1986, farm land values in the seven-state Tenth Federal Reserve District on average had fallen 55 percent from the market high in 1981. In the first quarter of 1987, land values were essentially unchanged, even rising for some types of land in some areas. Land values have dropped to the point of approaching cash flow levels in many crop areas. Land values may have stopped falling; however, with long term grain surpluses, rising meat supplies, and rising long term interest rates, it seems likely that land prices will be fairly flat over the next few years.

Grains

Despite the welcome slide in land values and a slow turnaround in farm credit conditions, agriculture still faces a formidable surplus problem in the grain sector. The surpluses ahead remain huge by any yardstick. Last year our third large crop in a row was produced while exports slid still further. That combination led to record stocks of grain.

The export outlook remains weak. Low U.S. prices and a weaker U.S. dollar will boost export volume this year, possibly significantly; but export value, what matters most to producers, may be little changed. And we are working off a low base, as 1986 set new lows for this decade for the value of U.S. farm exports and the value of our agricultural trade surplus. In the past six years, our agricultural trade balance has shrunk a whopping $20 billion.

Feed grain supplies are not likely to shrink much in the coming year. Harvested corn acreage this fall is projected to be 59.5 million acres, down from 69.2 million in 1986. Mother Nature has decided to lend a helping hand to producers, and so we are looking at record per acre yields this fall. It is rather hard to lower the supply at this rate, and livestock numbers are such that they will not make a noticeable dent in reducing the total supply of feed grains.

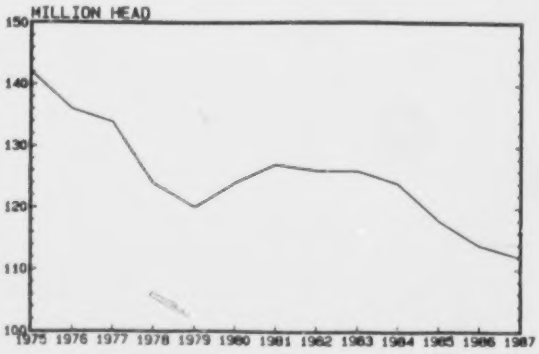
The wheat situation mirrors feed grains. Projected harvested acres are at 55.4 million, down 5 million from 60.7 million acres in 1986. Due to increased yields, it is expected that the 1987 harvest will actually be 50 million bushels above the 1986 harvest. Due to changing price ratios with corn, it is anticipated that less wheat will find its way into the feed sector, which will result in ending stocks of 1.9 billion bushels, up some 80 million bushels from last years. Producers will again find it to their advantage to participate in the government grain program in the coming year.

Livestock

Cattle prices have improved dramatically over last year's levels. This is especially true for feeder cattle and calf prices, which are important to Wyoming ranchers and stock operators. After declining persistently from 1979 through 1986, there is definitive evidence that the trend in cattle prices has turned. There are several reasons for the improvement in cattle prices. Most notably, beef supplies have dropped. However, in some cases, demand has improved, especially with respect to feeder cattle and calves, as a result of sharply lower feed grain prices. Higher prices for replacement cattle sent a strong signal to the cattle industry to halt liquidation and consider expansion. A response to profitability is taking place and will have profound implications on the beef industry for many years.

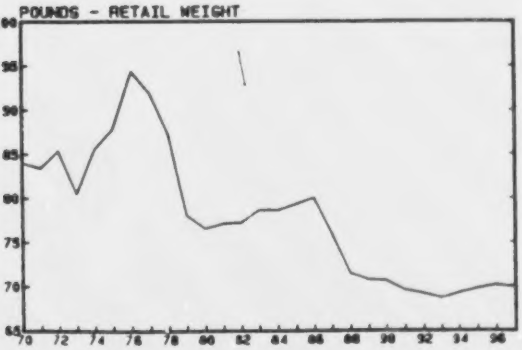
The USDA June 1 Cattle Inventory Report indicated that the cattle industry continues to reduce inventories. As of June 1, 1987, total cattle inventories were 112.1 million head, down 2 percent from 114.4 million head on June 1, 1986. Midyear inventories have been reported since 1973, and the June 1, 1987 inventory represents the lowest June inventory on record. Very likely, the inventory actually is at the lowest level since the early 1960's.

JUNE 1 TOTAL CATTLE INVENTORY



Moreover, the liquidation that has taken place is only beginning to reflect the fact that reduced inventories eventually lead to less supply or consumption. Beef consumption will decline in 1987 for the first time since 1979.

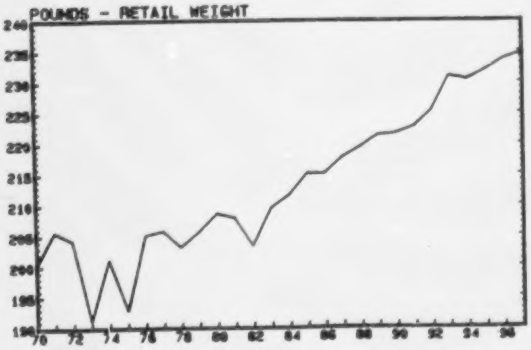
PER CAPITA BEEF CONSUMPTION



The reduction in inventory levels assures even lower consumption in the late 1980's.

Although the reduced supply of beef would suggest prices rising to the level that existed in 1979, competing meats from the pork and poultry industries are rising and thus will temper cattle prices somewhat. Total meat supplies in 1988 are likely to be at record highs. Poultry production can and will increase at a much faster rate than production in the pork and beef sector.

PER CAPITA TOTAL MEAT CONSUMPTION

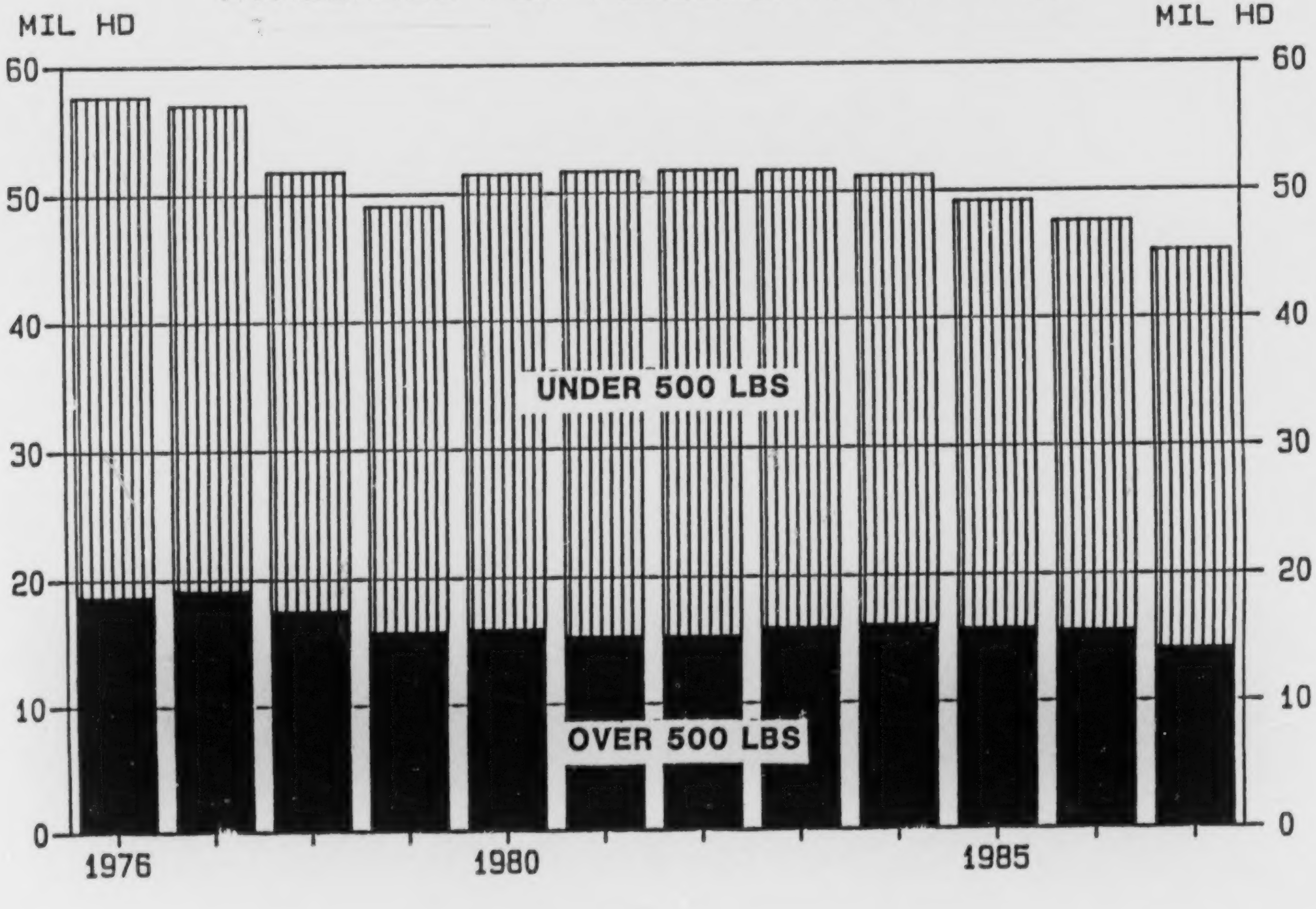


Steer prices for 400-500 pound calves will be in the $80/cwt range, with some strings of lighter cattle pushed above $90/cwt this fall. All signs point to strong feeder cattle prices throughout 1988 as supplies of calves and yearlings decline (see p. 12). Producers should review their winter feed supply and carefully project what prices would need to be in the spring to warrant keeping calves over the winter for sale at that time. Keeping them over the winter and going to grass next spring for sale in the fall of 1988 may prove to be a profitable venture, however, price risk is not something to be taken lightly. Even in periods of high prices, prices can fluctuate rapidly to lower levels in response to outside (e.g. political) impacts that are apart from traditional supply and demand analysis.

Robert D. Carver
University of Wyoming

JULY 1 FEEDER CATTLE SUPPLIES

AVAILABLE FOR PLACEMENTS ON FEED



Western Livestock Marketing Information Project
Cooperative Extension Service

Job Openings Outlook

Military Officers

Military officers hold leadership and supervisory positions in the Army, Navy, Air Force, Marine Corps, and Coast Guard. They bear legal responsibility for preparing for and carrying out effective military operations. Military officers are required to have technical and managerial abilities, as well as the ability to assume leadership of combat operations and peacetime maneuvers in defense of the United States and other countries. Military operations are supported by intelligence, delivery of supplies and maintenance of equipment, and training and administration of personnel. The work setting varies according to assignment, but, at times, involves supervising work out-of-doors in all kinds of weather, sometimes under hazardous conditions.

A military officer is required to have a bachelor's degree for most positions. A legal commitment is made to serve at least three years on active duty or in the National Guard or Reserves. Most officers are trained in ROTC programs, with others receiving training at military academies (West Point, Annapolis, Colorado Springs), or at Officer Candidate Schools (OCS). Entrance into an academy or ROTC program requires a high school diploma, above-average grades, recommendations, and high scores on aptitude tests such as the SAT or ACT. Individuals applying directly to the military must have a 4-year degree. Those already in the military must have completed Advanced Individual Training and 60 semester hours of college course work. All officers will undergo specialized training for their jobs. There are a variety of tuition aid programs for military officers interested in off-duty continuing education sponsored by the service.

The outlook for military officers is balanced with a slight shortage of technically trained people. Recruiters indicate difficulty getting qualified people for: Navy--physicians, nuclear power technicians, and pilots; Army--physicians, lawyers, and computer personnel; Air Force--civil and electrical engineers, and scientific officers; Marines--pilots. There are about 300,000 on active duty in the five services. Wyoming has about 627 military officers with an additional 55/full-time and 258/part-time in the Army/Air National Guard.

Average base pay is $1,190/month, not including housing and food allowances or federal tax advantage, all amounting to $430 a month more. Medical and dental care is free. Military officers with over 20 years of service average about $3,490-4,480/month with 30 days paid vacation.

For more information, contact the Wyoming Career Information System, P. O. Box 3808, University Station, Laramie, WY 82071, (307)755-6189.

Corporate Managers

Corporate managers provide the link between top management, who sets company goals, and employees, who produce goods or provide services. They administer the activities of departments, programs, branch offices, or other units to reach company goals. Duties of corporate managers depend on the size of the company and the organizational structure. They are responsible for planning, organizing, and coordinating activities of their unit with those of other units, and controlling the work of their assigned unit. Along with establishing procedures and recommending policies, corporate managers prepare, submit, and oversee budgets and other reports, and hire or approve the hiring of staff. Work is usually performed in private, industrial, and commercial businesses of all sizes.

In preparing for a career as a corporate manager, it should be remembered that companies vary in their preference for background training. Business administration or special skills such as data processing, research and development, marketing and production are the areas usually of preferred. Most colleges and universities offer business management and administration curricula leading to bachelor's, master's, or doctoral degrees. Since positions as corporate managers are not entry-level jobs, five to ten years of experience is usually necessary before qualifying. A 4-year college degree is a minimum requirement in some companies which have management trainee positions. People usually start in research, sales, or other types of jobs, and typically advance into supervisory positions, before moving into middle-management.

The outlook for corporate managers depends on several factors: general economic conditions, the number of new firms, and the growth or decline of existing firms. There is currently a slight surplus of corporate managers since there has been a downswing in the economy and the demand for them has been slackened. Firms have either closed offices and cut management positions to cut costs, or consolidated administrative activities at corporate headquarters or regional/divisional centers. In Wyoming, increases in energy production (coal, uranium, oil, and gas) result in increases in middle management positions. Sources indicate that although average employment growth is projected, future companies will have fewer middle-managers with increased responsibilities.

Salaries for middle-management range from $2,500 to $3,000 per month. Salaries will vary in relation to the size of the firm, geographic location, industry, and area of responsibility.

Froncella Ware,
Information Analyst Assistant

Wyoming Coincident Indicators Index

For the first quarter of 1987, the seasonally adjusted Wyoming Coincident Indicator Index (WCII) held close to where it ended the fourth quarter and was still up from the low reached in August. The WCII is derived using several economic variables which tend to coincide with changes in the overall Wyoming economy. It is computed on a quarterly basis by the Division of Research and Statistics, Department of Administration and Fiscal Control.

The WCII is composed of four variables which are: 1) total state employment, 2) total wages reported for the quarter, 3) total sales and use tax collections for the quarter, and 4) an industrial index. The industrial index is a composite index of industrial variables used to represent three of Wyoming's industrial sectors. For the industrial index, mining is represented by the number of active oil well drilling rigs. The agricultural sector is represented by a composite index of prices received for all Wyoming agricultural commodities. The third industry is tourism, which is represented by the total gallons of motor fuels plus gasohol sold each month.

Seasonally adjusted values for all four WCII variables were again down from the year before. First quarter employment was only off 3 percent from the year before on a seasonally adjusted basis, but the other three variables were down much more sharply. Sales and use tax collections were off 21 percent from the first quarter of 1986; total reported wages were off 15 percent, and the industrial index was off 16 percent. Within the industrial index, the drilling rig count was down 59 percent from the year before; total gallons of motor fuels and gasohol sold were down 15 percent; and the agriculture price index for all commodities was up 8 percent. Overall, the seasonally adjusted WCII was down 5 percent from the first quarter of 1986.

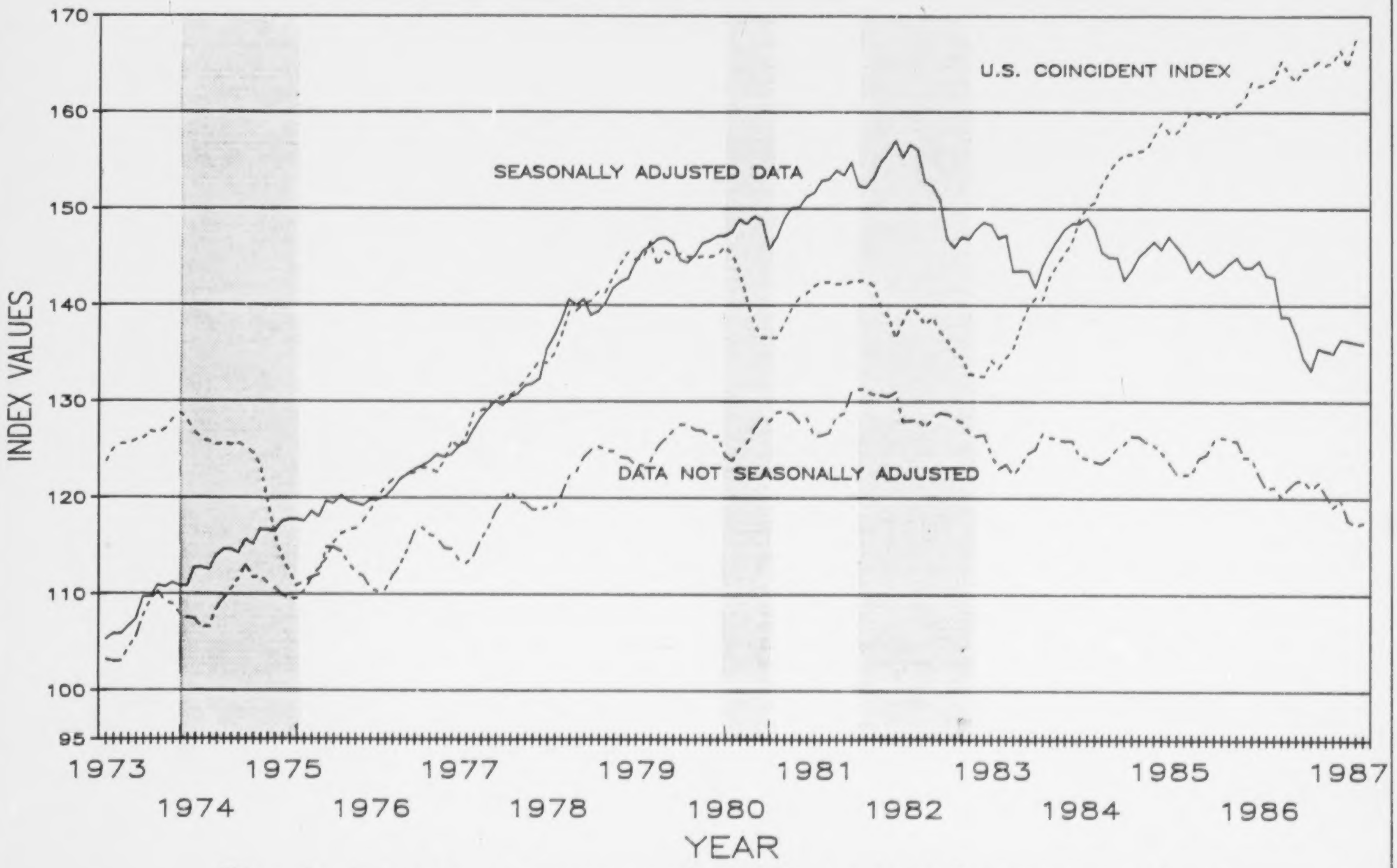
From the fourth quarter of 1986, the WCII for the first quarter of 1987 held steady at just about the same level as for December. Again with reference to the seasonally adjusted series, employment and wages were actually up 2 and 4 percent respectively from fourth quarter 1986 to first quarter 1987. However, sales and use tax collections, and the industrial index were down 8 and 4 percent respectively. The average overall WCII index for the first quarter was up by less than 1 percent from the average for the fourth quarter of 1986.

Early signals for the second quarter of 1987 indicate that the seasonally adjusted index will probably hold steady at about the same level as for the first quarter. The agricultural commodities price index is up for both April and May. Sales and use tax collections for April and May appear to be at about the same level as for the first quarter, but this will result in a small drop on a seasonally adjusted basis. Employment for April is up from the first quarter, but on a seasonally adjusted basis will be about even with the first quarter level. Finally, the drilling rig count is a little higher in April and May than in the first quarter, and when seasonally adjusted, should be definitely higher. Though the second quarter index appears likely to hold its own relative to the first quarter, it will probably be lower than the second quarter 1986 level. The early data for the WCII are mixed with sales and use tax collections and employment, down from year ago levels, but the agricultural commodities price index and the drilling rig count are up from year ago levels.

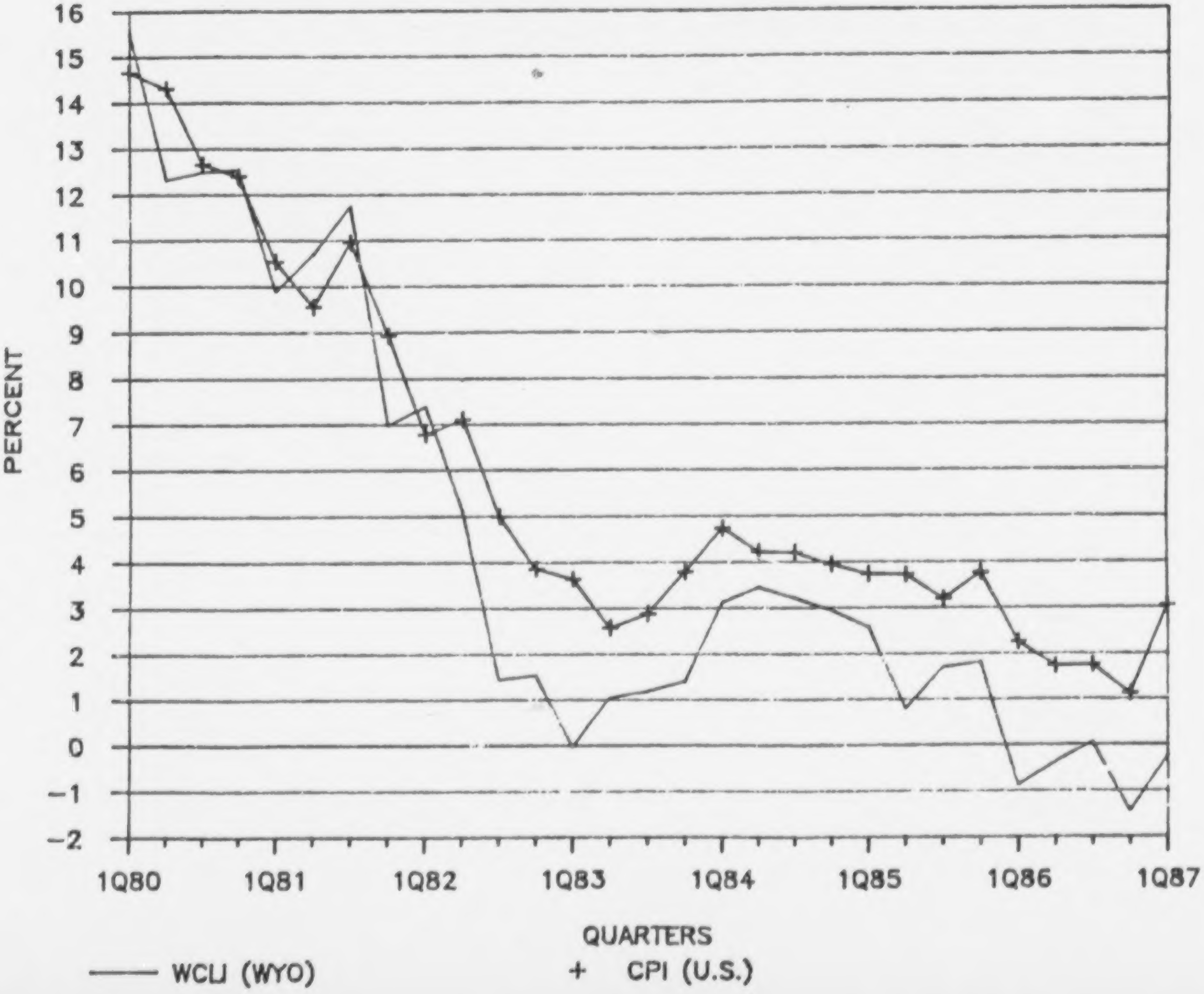
Steve Furtney, DAFC

WYOMING COINCIDENT INDICATORS INDEX
JANUARY 1973 THROUGH MARCH 1987

JUNE 27, 1987



Shaded areas represent U.S. recessionary periods.



INFLATION RATES - WYOMING AND U.S.

1st QTR 1980 – 1st QTR 1987

ECONOMIC DEVELOPMENT

Economic Development and Diversification Strategies for Wyoming

[The following is a slightly abridged version of Chapter 1 of Economic Development and Diversification Strategies for Wyoming, a report by Shelby Gerking, Professor of Economics, and Steven Yost, Research Associate, University of Wyoming. The full report is available through IPR. See Publications List on page 41 for ordering information.]

INTRODUCTION AND EXECUTIVE SUMMARY

Depressed energy and agriculture sectors have led Wyoming to actively consider its economic development options. Interest has centered mainly on policy initiatives at the state level to foster increased employment and personal income growth. This report reviews and evaluates major thrusts to achieve these objectives in traditional business and industrial sectors; tourism and agriculture are not directly considered. Emphasis is placed on programs pursued or proposed in Wyoming and five of its neighboring states: Idaho, Montana, Utah, Colorado, and Nebraska. Evaluation of economic development programs is difficult because most literature on this topic is purely descriptive and makes little effort to determine effectiveness in increasing state personal income and employment. Description is important in a policy context to ensure that alternatives are understood; yet, a selection of programs requires an evaluation of competing alternatives as well as monitoring to determine whether program objectives are achieved.

Through activities of the Economic Development and Stabilization Board (EDSB) and other state agencies, including the Wyoming Community Development Authority (WCDA), Wyoming is heavily involved in trying to attract relocating and expanding businesses to the state. A broad array of programs have been developed to support this thrust. Examples of state supported financial assistance to businesses include low interest loans made by the WCDA, by the EDSB (out of federal Community Development Block Grant funds), and by the Wyoming Treasurer's Office which administers the State's Small Business Assistance Act and Linked Deposit programs. Additional financial assistance programs have been approved in the recently concluded Wyoming Legislative session. These programs would: (1) create an Economic Development Loan Fund from public monies available under Constitutional Amendment IV; (2) create a Wyoming Science, Technology and Energy Authority that would make investments in technology development projects that have potential to stimulate economic development in the state; and, (3) authorize the State Treasurer to invest up to 3 percent or $30 million of permanent mineral trust funds in the debt of proposed or existing Wyoming businesses engaged in a clean coal or coal enhancement process projects.

Nonfinancial or business services offered by state government include: (1) foreign trade and investment programs of the Governor's International Business Office, (2) federal procurement assistance programs of EDSB, (3) management, planning, and marketing counselling by the Wyoming Small Business Development Centers, and (4) job training assistance by the Division of Manpower Planning, the state's seven junior colleges, and six vocational technical schools. Job training programs are heavily underwritten by federal funds available under the Job Training Partnership Act. In comparison with surrounding states, Wyoming offers greater availability of low interest loans; however, its federal procurement and small business development programs are quite new and therefore less developed.

Economic development programs must be evaluated in the context of existing state tax policy. As noted in a study by Fantus Company (1986), a key Wyoming business location asset is the virtual absence of important types of business taxes. This conclusion is reinforced in recent statistical studies (Helms, 1985 and Bartik, 1985) which show that low taxes promote more rapid employment and personal income growth. Wyoming levies neither corporate nor personal income taxes and property taxes are among the lowest in the nation. Thus, Wyoming already has an ideal tax climate, particularly for promoting business expansion and diversification away from energy production.

A frequently heard complaint concerning Wyoming's tax structure, however, is that severance taxes on energy extraction are excessive. Four measures passed by the recently concluded 49th Wyoming Legislature will reduce severance taxes on coal, oil, and gas production. Important aspects of these measures are: (1) exempting vented or flared natural gas from severance taxation along with gas consumed to produce crude oil from the same lease or unit, (2) crediting severance taxes paid on carbon dioxide against severance tax liabilities on crude oil when carbon dioxide is used as an injectant in a tertiary recovery process, (3) exempting oil and gas produced from wildcat wells from 2/3 of 6 percent severance taxation for a period of four years provided the well is completed between 1 Jan 87 and 31 Dec 89, and (4) exempting from severance taxation the gross value of coal in excess of $.80/ton provided that production is pursuant to new agreements executed between 31 Mar 87 and 31 Mar 89. Severance tax rate reductions may stimulate output in the energy sector; however, the extent of production increases and effects on total severance tax collections are difficult to estimate. If total severance tax collections fall and if lost revenue is replaced by heavier taxation of nonenergy businesses, economic development efforts could be compromised. In particular, incidence of severance taxes ultimately falls on resource owners (McLure, 1970). Although these individuals are mobile in the sense of being free to relocate, physical resource deposits they own are immobile in that they can be removed from the state only after extraction. Business taxes on nonenergy sectors, on the other hand, fall on inputs that are relatively more mobile than a resource deposit. After all, an important dimension of industrial diversification efforts in Wyoming rests on attracting mobile inputs from other states. As a result, replacing lost severance taxes with other taxes that fall on mobile inputs only will moderate Wyoming's diversification opportunities.

In light of Wyoming's very low business taxes in nonenergy sectors, an important though unresolved question is: How much extra economic growth can be fostered through low interest loans and business services? Given the conceptual similarity between reduced business taxes and increased business subsidies from economic development programs, subsidies also would be expected to promote employment and personal income growth. For four reasons, however, little evidence can be cited showing that this outcome actually materializes. First, high quality statistical studies of this relationship are difficult to carry out. Data availability is one of several key problems. A second reason involves establishing whether particular subsidy programs actually are responsible for creating or maintaining particular jobs. Protestations of business executives do not prove causality because of their strong vested interests in convincing elected officials and the public at large that subsidies are necessary. Additionally, studies that look only at projects that have received subsidies (see Mandleker et al, 1980; and Lind and Elder, 1986) do not consider what would have happened in their absence. Third, lasting or long term benefits of current financial subsidies may be small. Martin and Graham (1980), for example, found that financial assistance from the U.S. Economic Development Administration (EDA) to economically lagging regions did not stimulate income growth in years after the aid was removed. These authors concluded that growth after aid depended on factors other than the amount or nature of EDA assistance. Therefore, use of financial subsidies to "prime the economic pump" may not have the sought after lasting effects.

Fourth, and perhaps most importantly, both financial and nonfinancial programs may work against the objectives they were put in place to achieve. Economic development subsidies to business reduce the cost of nonlabor inputs such as land, capital and equipment, and external management and marketing expertise relative to labor inputs. As a consequence, businesses receiving subsidies will economize on labor and substitute inputs that now are cheaper. Of course, business subsidies also encourage expansion of output; a factor leading to hiring more of all inputs including labor. Increases in employment, therefore, require that this product output effect dominate the previously described labor substitution effect. Yet, no matter how much output rises, the reduced ratio of labor to nonlabor inputs resulting from substitution will limit employment growth when business subsidies are granted.

Because of potential substitutions against labor, costs of creating or retaining jobs using business subsidy programs must be carefully evaluated. Financial incentive programs should come under particular scrutiny because they are relatively more expensive than nonfinancial programs. Costs of loans made through Wyoming's Small Business Assistance Act and Linked Deposit programs, for example, extend well beyond administrative costs. Because both programs require the state to accept below market interest rates on invested funds, foregone interest income represents a major portion of total costs. Foregone interest income attributable to the Linked Deposit program alone is estimated to be at least $2.7 million in calendar 1987. This conservative figure assumes that the state could earn 3 percent more if the $90 million allocated to this program were invested in alternative risk free securities. Adding in foregone interest income attributable to Small Business Assistance Act loans results in a figure that is over twice the EDSB annual budget of $1.9 million. Moreover, foregone interest income still will be larger in future years as recently enacted economic development loan programs come on line. These figures indicate that concerns expressed over protecting the corpus of the $10 million in Economic Development Loan Program (Amendment IV) funds are exaggerated. Why not place a portion of these funds at risk as equity investments in new Wyoming businesses when the state already is giving away substantial sums of money in the form of subsidized loans? Interest subsidies effectively are grants or gifts to the private sector.

Another perspective on cost can be obtained from comparing business subsidy programs to tariffs used in international trade. Subsidies are aimed at reducing business costs in a state while tariffs provide an umbrella under which domestic producers can raise prices and expand output. Thus, tariffs and subsidies erect protectionist barriers against "foreign" competition in that both provide cost advantages to "domestic" producers relative to producers elsewhere. In fact, tariffs would represent an alternative to economic development subsidies, were it not that tariff protection by U.S. states is a constitutionally forbidden restraint of interstate commerce. Tariff, quotas, and other impediments to international trade recently have received considerable scrutiny from the standpoint of resulting costs to consumers, gains to producers and foreign suppliers, and cost-effectiveness in saving domestic jobs. In their study of 31 U.S. industries, Hufbauer, Berliner, and Elliott (1986) estimate that costs to consumers per production job saved range from $20,000 to $100,000 annually (depending on which industry is considered) and in a few cases exceed $500,000 per year. Because of their protectionist objectives and built-in incentives to economize on labor inputs, business subsidy programs may well be equally expensive in terms of cost per job saved. A more extensive evaluation of costs to Wyoming residents per job saved by business subsidy programs would be a useful topic for further research.

In light of these considerations, Wyoming needs to re-evaluate its allocation of state economic development funds and make greater use of strategic planning. Strategic planning avoids focusing on single programs in isolation and addresses five questions: (1) Where are we now? (current status), (2) Where do we want to be going? (future directions), (3) How can we get there? (mission), (4) What are our resources? (budget), and (5) How do we know if we are on track? (monitoring and control). The Wyoming Futures Project and the studies by Fantus Company commissioned by the Wyoming Community Development Authority have made a start toward answering these questions. Yet, more work is needed in order to call into focus all of Wyoming's economic development tools and initiate cost-effective programs at both the state and local levels, that will make a significant improvement in the state's business climate. Understanding the experience of other states in the economic development area is important; but that experience clearly demonstrates that there are no easy or tried and true solutions. Each state has a unique set of growth opportunities and barriers that dictate how a strategic plan is best developed. Moreover, similar to many other states, Wyoming's economic development programs are administered by diverse agencies including the EDSB, WCDA, Treasurer's Office, Department of Labor, and University of Wyoming. This decentralization together with newness of many Wyoming programs makes planning and consideration more difficult. However, addressing the strategic planning questions raised earlier still is crucial. A comprehensive plan must be formulated in order for Wyoming to compete successfully with other states for a greater share of the nation's economic growth.

In developing the strategic plan for economic development in Wyoming, three specific policy options are recommended for consideration. One option is to sharply cut back on financial subsidy programs, particularly for established in-state businesses. Such subsidies may be productive, however, in temporarily protecting new or expanding businesses from competition or in attracting businesses from out-of-state. Additionally, these programs are best aimed at firms that will build the state's export base or reduce reliance on imported goods, as envisioned in legislation concerning uses of Economic Development Loan Program Funds. Thus, state subsidy funds would be leveraged through operation of the economic base multiplier. Multiplier estimates, which range from 1.75 to 2.0 for the state of Wyoming, imply that an extra dollar of income in the export or basic sector leads to an additional $.75 - $1.00 of income indirectly generated in the nonbasic sector. Eligibility requirements of other state business subsidy programs do not adequately distinguish between export oriented and local population serving firms.

Another option is to place greater emphasis on providing high quality services to business operating in the state. The rationale here is that while state policy cannot force growth to occur, it can improve the business environment that makes economic development possible. International marketing and investment, federal procurement, small business development, and job training programs have shown both promise and payoff in enhancing the business climate in neighboring states. Also, these types of programs are less expensive than financial subsidy programs and enable the state to step forward with assistance that may not be readily available from the private sector. Service provision should not begin and end with these four programs, however. Statistical studies draw attention to education, health services, provision of municipal and transportation infrastructure, streamlining of permitting processes, and other public activities that are valued by the business community. In fact, Helms' (1985) results demonstrate that state expenditures on public health, highways, local schools, and higher education promote more rapid personal income growth.

A third option involves establishing centers in selected Wyoming communities. A system of innovation centers would have the advantages of: (1) fostering entrepreneurship and (2) tying together existing business service and financial programs. A center initially may require support (subsidies) from public funds; but, if successful, it could be phased into the private sector and state support could be eliminated in much the same way that this transition was accomplished with the Utah Innovation Center and other centers of this kind. These centers could be aimed at training two specific groups: (1) students from UW and/or community colleges interested in starting businesses after graduation, and (2) existing Wyoming entrepreneurs interested in spending brief periods in residence to acquire specific skills. Thus, the centers would be geared to specific employment related outcomes.

Three key reasons emerge for emphasizing the innovation centers concept. First, they could be targeted at a selection of the most talented and highly motivated people in Wyoming. Second, specific fields of study could be adapted to the economic development needs of the state and to existing expertise in the higher educational system. Energy extraction and processing technology, composite materials development, and biotechnology are three of many examples that could be cited in this regard. Third, the innovation centers could be tied into on or off campus courses in entrepreneurship and product development taught by community college or UW faculty. These courses could be adapted to Wyoming from those established in other states through the National Science Foundation's Innovation Centers program. Surveys conducted by Scheirer et al (1985) to evaluate this program found that courses in innovation and entrepreneurship are popular among students and have desired impacts on their subsequent behavior. Students involved in the NSF initiated innovation centers rated courses in innovation and entrepreneurship more highly on a satisfaction scale than other courses they had completed. More importantly, within five years of graduation student participants in innovation center programs were 50 percent more likely to have invented something and 40 percent more likely to have started a business than were other business and engineering students in a carefully matched comparison group. Even larger differentials were found at particular universities where educational programs were aimed mainly at engineering `students and more course work was offered on innovation topics.

Once established, the system of innovation centers could be used to tie together other types of economic development programs offered by the state. Activities there, for example, could be integrated with support services currently provided by the network of Wyoming Small Business Development Centers. This network also could place recent graduates in touch with other business support service programs available through the Governor's International Business Office and the Economic Development and Stabilization Board. The innovation centers could acquire incubator space for businesses in the newly formed or preformation stages. Subsidized space could be provided both to center graduates as well as other residents of Wyoming who have identified promising business ventures. This group of entrepreneurs, then, would make a promising target for a portion of the state's financial assistance programs.

These ideas fit in with recommendations by the Wyoming Futures Project's Economic Stability Task Force (Casper Star Tribune, January 21, 1987) to expand state sources of equity financing. In particular, the Task Force urged that at least a portion of Amendment IV funds be placed at risk in order to establish one or more seed capital funds for business incubator facilities and venture capital pools for businesses in the start-up phase of operations. According to Task Force recommendations, the Legislature would allocate funds that could be used for such purposes, the Economic Development and Stabilization Board would, in turn, receive these monies, distribute them to the private sector and verify performance. Experienced private sector organizations then would make final decisions on specific enterprises in which to acquire debt or equity positions. Thus, the operation of the business incubators in connection with a system of innovation centers easily could be subjected to scrutiny from the private sector. Such scrutiny would be highly desirable because after a brief period of time, new firms would be expected to leave the incubator facilities and compete successfully outside of this heavily subsidized environment.

[The authors wish to thank the Priority and Review Committee for the University of Wyoming Economic Development and Diversification Program for its patience and encouragement throughout this project; and William Morgan, Paul Cleary, Richard Miller, and Stan Smith for helpful comments received on previous drafts.]

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Revision of Wyoming General Fund Revenues

Wyoming's taxation and revenue system has a character of its own. There is no personal income tax and the largest employer of wealth and manpower in Wyoming is public spending. In 1985, according to the Wyoming Taxpayer's Association, there were 326 units of government exercising taxing authority in Wyoming from the state level to the local level of school and special districts.

Taxes on property, including the ad valorem property tax on minerals, have provided almost half of the total revenue for state and local government, and sales and use taxes have been the next most important source of revenue. There is an unusual dependence upon mineral taxes creating a narrow tax base which ties Wyoming's economy to world energy prices. As an example of this dependence, consider that mineral valuation comprised over 70 percent of the total valuation of the state in 1985. This represents a steady rise in percentage since 1965 when only 32.1 percent of the state valuation came from mineral valuation (Legislative Service Office). In 1981 and 1982, the situation looked very favorable for Wyoming's growth. Energy production was up and corresponding growth and stimulation of the economy resulted. As state revenues increased, so did legislative appropriations and subsequent expenditures.

In examining various state agency annual reports for 1986, a prevailing theme is encountered: the dependence of the state's economy and revenues on mineral prices. This is true for all levels of government from the state to the local level. The drop in world energy prices has had a profound effect on Wyoming's economy and particularly on the state General Fund. Projections for General Fund revenues for the next five years were reported in 1982 by the Legislative Service Office in Wyoming's General Fund: History and Projections. The projected revenues for fiscal year 1986 were $598.7 million. In actuality, they amounted to only $392.4 million. The state is now facing tremendous financial difficulties at all levels of government. The energy price situation and its effect on state government and business is evident.

In the fiscal year 1986, Wyoming was one of the ten states to experience a decrease in state government tax collections, according to the U.S. Bureau of Census. The drop in tax collections in these 10 states is attributed in part to declines in the oil and gas industries. Compared to a national average gain of 5.6 percent in state government tax collections (the second lowest gain for the nation in more than two decades), Wyoming dropped 1.4 percent in FY86.

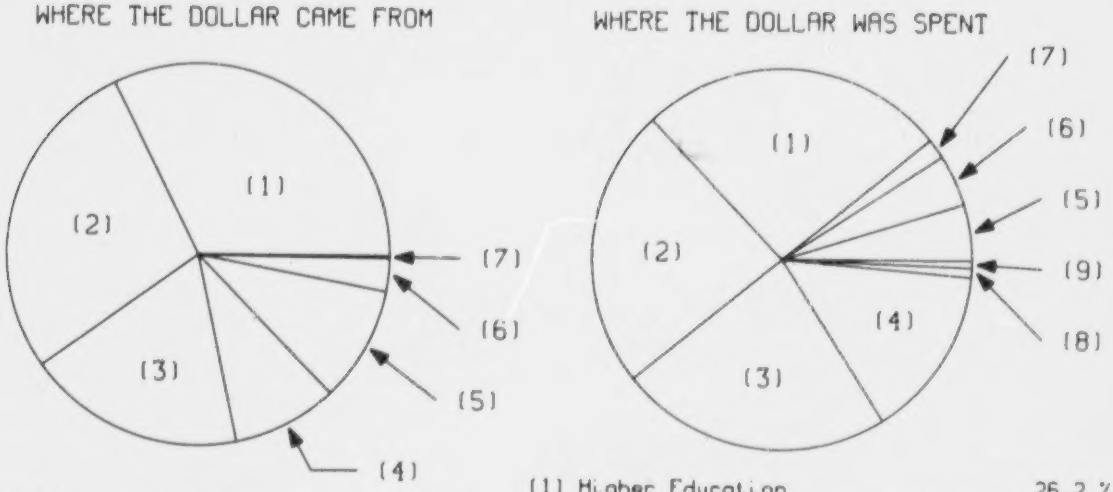
The state General Fund is the source of revenues for the basic operation of state government. Although there are hundreds of separate sources of General Fund revenues, taxes are the major source. At least a portion of sales, use, and excise taxes; mineral severance taxes; inheritance/estate taxes; franchise taxes; motor carrier taxes; and other taxes goes to the General Fund. Of these taxes, the sales, use, and excise taxes and the mineral severance tax constitute more than half of the General Fund revenues.

The Wyoming state government General Fund is "to be used for the ordinary operations of state government, and is designated to receive all revenues and account for all expenditures not otherwise provided for by law in any other fund." (W.S. 9-7-504 (6)) There are over 85 various agencies, institutions, commissions, boards, and other departments and districts which use General Fund revenues. The main areas dependent on General Fund revenues are agencies in higher education; hospitals, health, and social services; resources and recreation, and general government.

In the past, Wyoming's mineral severance taxes have covered the cost of growth in counties, cities, and towns. This is no longer true and local government is experiencing the effects. Natrona County taxable value for 1987 is down 23 percent from 1986. The county's assessed valuation dropped from $457.2 million to $351.8 million based on taxable value of minerals, land, and property. The State Board of Equalization has set the 1987 valuation of county oil and gas production and industrial and utility plants at only half the 1986 valuation. This decrease in revenue means losses of over $5 million to county public schools, county and city government, and Casper College.

In response to projected losses in revenue, state spending reductions of close to $63 million were ordered by the governor in the Fall of 1986, according to the Legislative Service Office. Further reductions were ordered as a result of revisions in the General Fund projections published by the Consensus Revenue Estimating Group in December, 1986.

GENERAL FUND - FISCAL YEAR 1986



WHERE THE DOLLAR CAME FROM

(1)	Sales and Use Tax	32.3 %
(2)	Mineral Severance Tax	27.6 %
(3)	Interest on Permanent Wyoming Mineral Trust	18.4 %
(4)	All Other Taxes Revenue	8.9 %
(5)	Use of Property & Money	9.8 %
(6)	Charges for Sales & Service	2.8 %
(7)	Federal Aid & Grants	0.2 %

WHERE THE DOLLAR WAS SPENT

(1)	Higher Education	26.2 %
(2)	Hospitals, Health, Social Services	23.8 %
(3)	Resources and Recreation	23.1 %
(4)	General Government	14.6 %
(5)	All Other State Agencies	4.8 %
(6)	Correction and Law Enforcement	4.4 %
(7)	Judicial	1.7 %
(8)	Elementary and Secondary Education	0.8 %
(9)	Legislative	0.6 %

Source: State Auditor Annual Report

The Consensus Revenue Estimating Group is comprised of representatives from the Legislative Service Office, the Department of Administration and Fiscal Control, Division of Research and Statistics, the State Auditor, the State Treasurer, the Department of Revenue and Taxation, the State Geological Survey, and the University of Wyoming. They meet annually to develop a single set of General Fund revenue projections upon which the Legislature can base its appropriations.

They state in their December 16, 1986 revision of the General Fund Revenue Projections that "this revised report represents the most dramatic revision of estimated state revenues in recent history. The potential impact of this report is enormous and may well initiate the most significant changes in spending at the state level in the past thirty or more years." They go on to repeat that recurrent theme of Wyoming's dependence on energy prices.

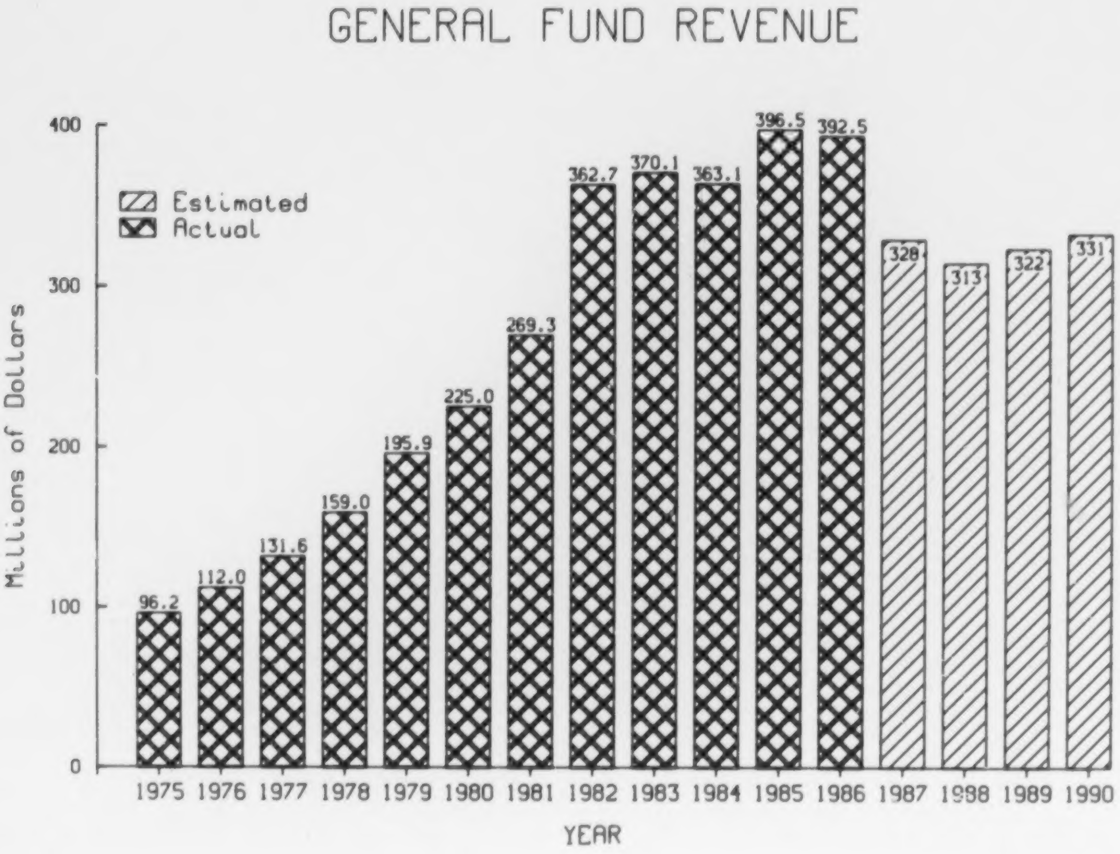
These new downward revisions of revenues were the result of being able to more closely follow tax information. Severance taxes for the third quarter of 1986 were down because of lower than predicted selling prices for oil and gas. Although oil production levels were as projected, the value per barrel for Wyoming crude did not rebound and stabilize as predicted. Wyoming crude used to command a premium above the world price, but now averages only about 75 percent of the world average price. Coal production was at the predicted level, but the projected average price was down substantially.

Most experts, according to the Consensus Revenue Estimating Group, predicted that gas production and value would be up by the end of 1986, but this did not happen. Pooled interest, another source of General Fund revenues, is directly related to increases or decreases in the total cash balance of the General Fund, which is down. Sales tax revenues dropped faster than predicted and the outlook for FY 1988 is no better since the situation is compounded by reduced government spending. All these factors combine to produce the low projections for General Fund revenues illustrated in the graph below.

The State Department of Revenue and Taxation reports that even though taxpayers in some counties are paying higher than ever sales taxes, the sales and use tax rates for contribution to the state General Fund have not changed since 1935. Wyoming is the only state without income tax which has not raised sales and use tax rates. Some changes in the base for the General Fund occurred in 1967, but essentially the fund revenues are still dependent on the energy industry.

The Consensus Revenue Estimating Group will meet again in October of 1987 to formalize and finalize projections for next year, says Phil Kiner of the Department of Administration and Fiscal Control. However, as of July, the total budget situation looks much the same as it did last December and preliminary estimates of revenue are no higher than projected.

Suzanne Taylor
IPR/CRIS



Sources: State Auditor Annual Report
Consensus Revenue Estimating Group

ECONOMIC CHANGES

ECONOMIC CHANGES

(Editor's note: The purpose of this section is to point out areas of the Wyoming economy in which noteworthy changes occurred or in which existing trends were significantly accentuated, during the latest reported period.)

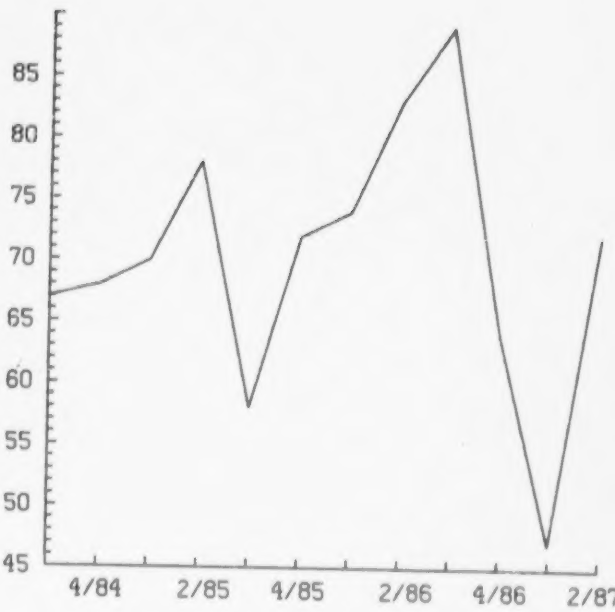
Among the highlights recorded in the Update's statistics for the second quarter of 1987 were changes in the number of personal bankruptcies, the number of business failures, and oil production.

The number of personal bankruptcies continued a general trend upward reaching 359, a record high for the twelve quarters considered in this series. This represents an increase of more than double the number of bankruptcies in the third quarter of 1984 and an increase of 12 percent since the second quarter of 1986.

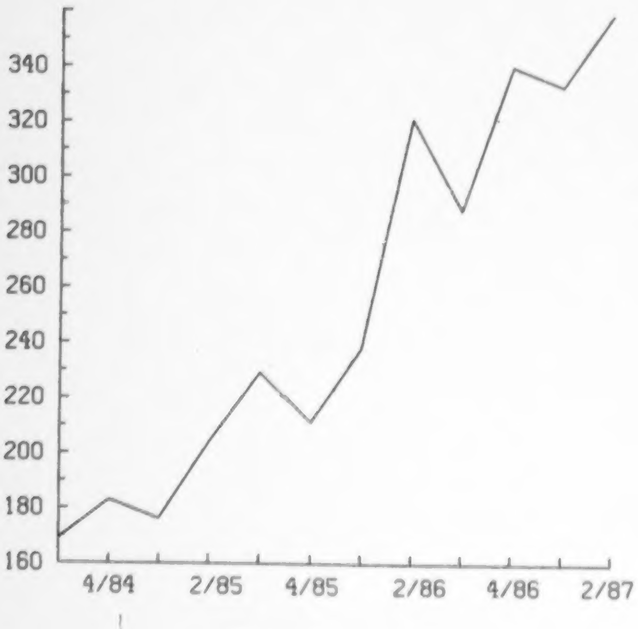
There were 72 business failures in the second quarter of 1987, down 13 percent from the second quarter of 1986, but up 12.5 percent from the fourth quarter of 1986 and up 53 percent from the first quarter of 1987.

Although the active rig count is up slightly from the first quarter of 1987, it is still low at 27 active rigs compared to 81 rigs during the second quarter of 1985. Oil production continues to decrease at 319,000 barrels a day for the second quarter of 1987, a record low for the twelve quarters considered in the Update's series. This compares to 330,000 barrels per day for the second quarter of 1986 and 334,000 barrels per day for the second quarter of 1985.

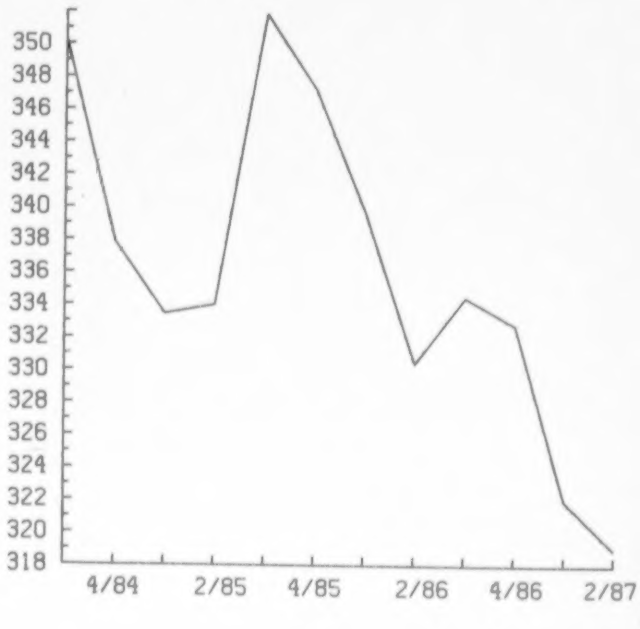
Business Failures



Personal Bankruptcies



Oil Production



WYOMING DATA

Table 1: Agriculture[1]

Calendar Quarters	3/84	4/84	1/85	2/85	3/85	4/85	1/86	2/86	3/86	4/86	1/87	2/87
1. Timber Cut in Wyoming National Forests (MBF)	48671.	63055.	23591.	6564.	35705.	57834.	27236.	10067.	10867.	42510.	47783.	25572.
Price Indices[2] (1967=100)												
2. Wyoming Crops, Prices Received-Latest	254.	255.	257.	260.	256.	270.	260.	240.	213.	208.	205.	209.
3. Wyoming Crops, Prices Received-Average	255.	253.	254.	259.	260.	267.	262.	252.	225.	212.	205.	205.
4. U.S. Crops, Prices Received-Latest	260.	240.	246.	236.	216.	226.	213.	212.	184.	191.	194.	215.
5. U.S. Crops, Prices Received-Average	271.	251.	243.	239.	224.	219.	214.	217.	193.	191.	190.	206.
6. Wyoming, All Commodities, Prices Received-Latest	254.	248.	253.	243.	242.	234.	242.	239.	248.	238.	264.	268.
7. Wyoming, All Commodities, Prices Received-Average	246.	249.	254.	253.	237.	243.	236.	246.	241.	244.	253.	273.
8. U.S. All Commodities, Prices Received-Latest	252.	247.	246.	235.	219.	234.	222.	221.	223.	221.	223.	240.
9. U.S., All Commodities, Prices Received-Average	259.	249.	247.	237.	225.	230.	223.	222.	226.	223.	221.	235.
10. Wyoming Livestock, Prices Received-Latest	254.	246.	252.	238.	238.	223.	237.	238.	258.	246.	282.	285.
11. Wyoming Livestock, Prices Received-Average	244.	247.	254.	250.	230.	236.	228.	244.	245.	253	267.	293.
12. U.S. Livestock, Prices Received-Latest	247.	253.	246.	235.	222.	243.	230.	230.	257.	248.	249.	262.
13. U.S. Livestock, Prices Received-Average	251.	249.	251.	236.	227.	240.	232.	228.	255.	252.	249.	261.
14. Prices Paid by U.S. Farmers-Average	334.	332.	332.	332.	329.	329.	330.	324.[3]	326.	324.	327.	331.

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[1] First time readers of WQU should refer to the "Format" page (in back) for an explanation of abbreviations and table formats.

[2] The index for the last month (latest) of each quarter, along with the average of the three monthly indices of each quarter.

[3] This figure is for the month of April. This index is now reported in the months of January, April, July, and October.

Sources: Series 1: United States Forest Service. "Timber Cut and Sold, Convertible Products." Region 2 and 4 reports published quarterly.
Series 2-15: Wyoming Crop and Livestock Reporting Service. Bi-weekly Ag Statistics.

Table 2: Banking and Finance

Calendar Quarters	3/84	4/84	1/85	2/85	3/85	4/85	1/86	2/86	3/86	4/86	1/87	2/87
1. Total Bank Loans and Leases Financing Receivables (T$)	2368731.	2352704.	2356267.	2348277.	2296857.	2226477.	2173437.	2108551.	2066324.	2003375.	1932753.	INA
2. Total Bank Deposits (T$)	3790977.	4005456.	3808654.	3908435.	3959810.	4048702.	3908134.	3797038.	3787785.	3912276.	3741328.	INA
3. Total Non Interest-Bearing Deposits (T$)	723344.	742392.	652223.	643908.	687128.	689811.	624421.	620064	611410.	638317.	559803.	INA
4. Savings and Loan Mortgage Loans (T$)[1]	771560.	806660.	780644.	806897.	949722.	929668.	826697.	817750.	811230.	787910.	810354.	812614.
5. Savings and Loan Deposits (T$)	1111213.	1142593.	1161848.	1193339.	1183564.	1166220.	1139851.	1137374.	1137155.	1148406.	1120110.	1104107.
6. Prime Interest Rate[2]	12.97	11.06	10.50	9.78	9.50	9.50	9.10	8.50	7.50	7.50	7.50	7.94

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[1] Only members of the Federal Home Loan Bank Board are included. Indicates amount at the end of the quarter.

[2] Rate is for the last available month of the quarter.

Sources:		
	Series 1-3:	Wyoming State Bank Examiner Quarterly Report.
	Series 4 and 5:	Federal Home Loan Bank of Seattle, Monthly Report. Comparative statistical analysis of member institutions.
	Series 6:	U.S. Department of Commerce, Bureau of Economic Analysis. Survey of Current Business. Published monthly.

Table 3: Business Conditions

Calendar Quarters	3/84	4/84	1/85	2/85	3/85	4/85	1/86	2/86	3/86	4/86	1/87	2/87
1. New Domestic Corporations	332.	273.	308.	307.	248.	283.	308.	301.	262.	307.	256.	270.
2. New Foreign Corporations	259.	244.	224.	259.	279.	217.	251.	223.	189.	217.	206.	232.
3. Total New Corporations	591.	517.	532.	566.	527.	500.	559.	524.	451.	524.	462.	502.
4. Business Failures	67.	68.	70.	78.	58.	72.	74.	83.	89.	64.	47.	72.
5. Value of Business Failures ($)	11774068.	12763251.	-25485776.[1]	23761569.	-2394988.[1]	8266910.	-933393.[1]	-2898465.	7242872.	12405831.	2935220.	5896578.
6. Personal Bankruptcies	169.	183.	176.	204.	229.	211.	238.	321.	288.	340.	333.	359.

[1] Assets exceed liabilities.

Sources: Series 1-3: Secretary of State. New and Foreign Corporations. Monthly report.
Series 4-6: Cheyenne Credit Bureau. Wyoming bankruptcy cases, business failures, and value of failures. Weekly publication.

Table 4: Construction

Calendar Quarters	3/84	4/84	1/85	2/85	3/85	4/85	1/86	2/86	3/86	4/86	1/87	2/87
1. New Residential Dwelling Units	642.	368.	380	725.	628.	511.	287.	544.	508.	317	270.	464.
2. Value of Residential Dwellings Constructed (M$)	37.9	23.0	24.3	50.1	42.3	33.9	19.5	33.4	33.7	21.6	17.6	34.5
3. Value of Nonresidential Construction (M$)	36.9	80.0	33.0	75.8	31.6	17.1	14.2	38.7	50.3	9.2	6.8	39.7
4. Building Permits Issues in Selected Wyoming Cities	3546.	2438.	1713.	3315.	3753.	2872.	2547.	3979.	3698.	2112.	1015.	2841.
5. Value of Authorized Construction (T$)	36344.	35282.	23474.	83920.	193451.	15695.	21484.	49454.	38669.	20453.	9083.	23444.
6. Mortgage Interest Rate[1]	12.03	12.05	11.42	11.31	10.69	10.47	10.01	9.74	9.74	9.43	8.93	8.96

[1] Conventional first mortgage for new home purchase. U. S. average for last month of quarter.

Sources: Series 1-3: F.W. Dodge Division of McGraw-Hill. "Dodge Local Construction Potentials." Published monthly.
Series 4-5: Institute for Policy Research. "Local Construction Reports." Survey of authorized construction in selected cities conducted monthly.
Series 6: U. S. Department of Commerce, Bureau of Economic Analysis. Survey of Current Business. Published monthly.

Table 5: Consumers

Calendar Quarters	3/84	4/84	1/85	2/85	3/85	4/85	1/86	2/86	3/86	4/86	1/87	2/87
1. New Truck Registrations	4102.	4574.	3581.	4052.	5187.	3915.	3343.	3650.	3951.	2993.	2253.	3155.
2. New Car Registrations	3676.	3397.	3012.	3752.	4868.	3177.	3200.	3804.	4181.	2784.	2211.	3171.
3. Wyoming Personal Income (M$)	6332.	6373.	6419.	6623.	6639.	6704.	6925.	6876.	6538.	6509.	INA	INA
4. US Disposable Income (B$)	2606.	2724.	2739.	2818.	2800.	2846.	2935.	2979.	2980.	2993.	3055.	INA
5. US Personal Income (M$)	3053166.	3107659.	3156982.	3193455.	3207892.	3268061.	3430620.	3485751.	3498710.	3529745.	INA	INA
6. Latest US Consumer[1] Price Index (1967=100)	312.1	312.2	315.3	318.7	320.5	323.4	321.4	323.0	324.9	325.7	330.5	333.4
7. Quarter's Average US CPI	310.0	312.1	313.9	317.7	319.7	322.4	323.0	321.6	327.1	325.7	329.1	INA
8. Liquor Sales (T$)	8180.	9554.	6360.	7538.	8931.	9526.	6293.	7500.	8334.	8811.	5421.	6673.

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[1] Number shown is for the last month of the quarter. CPI shown is the index for wage earners and clerical workers, not the CPI-U. Beginning with the data for January, 1985, the index is affected by a change in methodology used to compute the home ownership component.

Sources: Series 1-2: R.L. Polk and Company Motor Statistical Division. "National New Vehicle Registration Service." Published monthly.
Series 3,4: U.S. Department of Commerce, Bureau of Economic Analysis. Survey of Current Business. Published quarterly.
Series 4,6,7: U.S. Department of Commerce, Bureau of Economic Analysis. Survey of Current Business. Published monthly.
Series 8: Wyoming Liquor Commission. Sales data are reported to IPR.

Table 6: Employment and Labor[1]

Calendar Quarters	3/84	4/84	1/85	2/85	3/85	4/85	1/86	2/86	3/86	4/86	1/87	2/87
1. Civilian Labor Force	261039.	249652.	242092.	256819.	266519.	246570.	243710.	253139.	257544.	247051.	239055.	245083.
2. Employment	247678.	236455.	223081.	238436.	250115.	228368.	220575.	230952.	236026.	225690.	213415.	225271.
3. Unemployment	13360.	13197.	19011.	18383.	16403.	18203.	23135.	22187.	21518.	21361.	25640.	19812.
4. Unemployment Rate	5.1	5.3	7.9	7.2	6.2	7.4	9.5	8.8	8.4	8.6	10.7	8.1
5. Initial Claims Filed	5255.	8237.	13108.	8047.	6991.	12467.	15095.	13146.	11710.	14560.	13392.	8819.
6. Applications Received	11375.	9685.	11106.	12017.	11424.	11347.	14321.	14968.	13057.	10542.	10013.	11276.
7. New Non-Agricultural Openings	12905.	8655.	7004.	11450.	12640.	9685.	7059.	10595.	10997.	7408.	4872.	9615.
8. New Non-Agricultural Placements	10348.	8331.	6308.	9594.	9656.	9163.	6348.	8490.	8869.	7149.	4182.	8020.
9. Miners' Average Weekly Hours	42.9	43.5	41.4	43.0	43.6	44.2	44.2	42.0	41.3	42.1	41.8	41.4
10. Miners' Average Weekly Pay ($)	552.01	572.47	570.76	588.18	581.96	606.18	610.74	609.92	585.46	606.17	627.30	612.42
11. Miners' Average Hourly Wage ($)	12.87	13.16	13.79	13.69	13.35	13.72	13.83	14.53	14.18	14.41	15.02	14.79

[1] The most recent year's data are preliminary.

Sources: Series 1-11: Wyoming Employment Security Commission. Labor Force Trends. Published monthly.

Table 7: Energy and Mineral Production

Calendar Quarters	3/84	4/84	1/85	2/85	3/85	4/85	1/86	2/86	3/86	4/86	1/87	2/87
1. Wyoming Coal (TST)	31806.	34908.	36243.	34690.	35264.	31177.	34323.	30093.	32685.	35979.	36762.	34524.
2. U.S. Coal (TST)	246163.	188471.	220652.	223817.	225369.	220701.	226592.	222359.	216695.	223892.	217546.	221685.
3. Wyoming Oil (TBPD)	350.	338.	333.	334.	352.	347.	340.	330.	334.	333.	322.	319.
4. U.S. Oil (TBPD)	8879.	8942.	8877.	8974.	8915.	8960.	9052.	8815.	8725.	8585.	8364.	8351.
5. Wyoming Natural Gas (MMCFD)[1]	1285.	1417.	1601.	1297.	1201.	1348.	1245.	1373.	1293.	2021.	INA	INA
6. U.S. Natural Gas (MMCFD)	47968.	49888.	51347.	45317.	44400.	47757.	48251.	44326.	43457.	46823.	49320.	INA
7. Active Rig Counts in Wyoming-Average	116.	128.	99.	81.	95.	96.	57.	25.	22.	38.	23.	27.

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[1] Beginning with fourth quarter 1986, Wyoming gas includes carbon dioxide production.

Sources: Series 1,2,5, and 6: U. S. Department of Energy. Energy Data Reports. Gas data are from _Natural Gas Monthly_, and the Wyoming Oil & Gas Conservation Commission. Coal data are published weekly.
Series 3-4: _The Oil and Gas Journal_. U.S. and Wyoming Oil Production. Published weekly.
Series 7: Petroleum Information Corporation, Hughes Tool Company. Monthly Average Active Rig Counts in Wyoming.

Table 8: Government

Calendar Quarters	3/84	4/84	1/85	2/85	3/85	4/85	1/86	2/86	3/86	4/86	1/87	2/87
1. Sales and Use Tax Collections (T$)	57132.	59570.	54966.	30917.	63025.	65957.	53816.	47695.	55716.	36042.	39867.	39591.
2. Violent Crime[1]	350.	334.	304.	275.	350.	319.	292.	380.	374.	269.	299.	325.
3. Nonviolent Crime[2]	4790.	4170.	4170.	4969.	5120.	4212.	4294.	5485.	5265.	4294.	3955.	4772.
4. Stolen Property (T$)	2856.	2487.	2244.	2437.	3443.	2447.	2529.	3713.	2420.	2222.	1880.	2342.
5. Stolen Property Recovery Rate	51.5	45.5	51.9	38.5	51.6	41.0	34.2	54.0	38.6	31.0	41.4	35.7
6. Percent of Crimes Cleared[3]	22.9	30.7	28.3	24.0	25.1	28.9	28.2	24.7	25.2	36.4	32.0	26.6

[1] Murder, negligent homicide, forcible rape, robbery, aggravated assault.

[2] Burglary, larceny, auto theft.

[3] Clearance of a crime indicates resolution of a complaint by arrest or other extraordinary means.

Sources: Series 1: Wyoming Department of Revenue and Taxation, Sales and Use Tax Division. "Net Collections by Business Class by County." Published monthly.

Series 2-6: Uniform Crime Reporting Center for Criminal Justice Research, Division of Criminal Identification, Office of the State Attorney General. "Crime in Wyoming." Published quarterly.

Table 9: Tourism

Calendar Quarters	3/84	4/84	1/85	2/85	3/85	4/85	1/86	2/86	3/86	4/86	1/87	2/87
Visitors, National Parks and Monuments												
1. Yellowstone	1561475.	100802.	66776.	592059.	1500133.	103487.	79077.	607923.	1593749.	124314.	75835.	681163.
2. Grand Teton	1373523.	206891.	130583.	517614.	1299635.	181840.	138794.	530991.	1314373.	196051.	141570.	535659.
3. Devil's Tower	131447.	15145.	8841.	68885.	135061.	12157.	9237.	86167.	186134.	16610	8523.	92700.
4. Fossil Butte	9107.	1762.	115.	4254.	10434.	1213.	205.	4367.	10105.	1152.	282.	5082.
5. Fort Laramie	54704.	5527.	2625.	26185.	49165.	3921.	2027.	28120.	52465.	3863.	1305.	35117.
6. Big Horn NRA-South[1]	67403.	26388.	31533.	56612.	77495.	46073.	18574.	53634.	65696.	40878.	22056.	55064.
Other Tourism Indicators												
7. Traffic Count (Avg. number of Vehicles/Day)	169579.	101625.	88135.	131520.	166903.	98463.	90397.	119613.	147829.	91685.	78349.	116920.
8. Hotel, Motel, and Camp Sales Tax (T$)	2178.	1389.	932.	1070.	2136.	1370.	862.	1185.	2205.	1364.	928.	891.
9. Gasoline Sales (TGL)	102748.	77108.	66798.	83529.	101676.	74304.	62891.	76603.	95902.	68488.	56561.	INA

[1] Big Horn Canyon N.R.A. is only partially in Wyoming. Only visitation for the Wyoming part is shown.

Sources:
Series 1-6: Monthly visitor use reports of the National Park Service.
Series 7: Traffic Survey Unit - Planning Branch, Wyoming State Highway Department. "Selected Recording Stations Traffic Counter Data." Published monthly.
Series 8: Wyoming Department of Revenue and Taxation. "Sales and Use Tax Summary by County by SIC Major and Minor." Reported monthly.
Series 9: Petroleum Association of Wyoming. Monthly Gasoline Gallonage Report.

Table 10: Utilities[1]

Calendar Quarters	3/84	4/84	1/85	2/85	3/85	4/85	1/86	2/86	3/86	4/86	1/87	2/87
1. Residential Electric Connections	178837.	179123.	179451.	181034.	179423.	179609.	179931.	179179.	177718.	177613.	177091.	176113.
2. Residential Electric Consumption (TKWH)	359496.	484523.	542962.	395900.	348469.	510291.	502703.	342033.	300186.	408558.	476965.	337943.
3. Commercial Electric Connections	32874.	32738.	33058.	33730.	33782.	33603.	33606.	33885.	33786.	33880.	33355.	33744.
4. Commercial Electric Consumption (TKWH)	455181.	468378.	504376.	474481.	497271.	512748.	499198.	425035.	418211.	486495.	438712.	403123.
5. Industrial Electric Connections	3122.	3059.	2957.	2926.	2933.	2872.	2927.	2811.	2884.	2655.	2989.	2791.
6. Industrial Electric Consumption (TKWH)	2049121.	2479998.	1572877.	1904448.	2159299.	2626516.	1514740.	1313271.	1452583.	1708946.	1718924.	1587866.
7. Other Connections[2]	3438.	3165.	2916.	3145.	3219.	3112.	3451.	3285.	3317.	3030.	2801.	3201.
8. Other Consumption (TKWH)	50031.	10385.	5321	19238.	57385.	10970.	11110.	41061.	66445.	55088.	47998.	51328.
9. Residential Natural Gas Connections	74802.	75736.	76112.	75456.	74772.	75826.	76146.	75383.	74548.	75188.	75206.	74384.
10. Residential Natural Gas Consumption (MCF)	792447.	2896230.	4569541.	2018115.	776733.	3018677.	3860776.	1833160.	1013300.	2661644.	3840399.	1944656.
11. Commercial Natural Gas Connections	6770.	6859.	6882.	6785.	6651.	6737.	10926.	6651.	6545.	6623.	6652.	6617.
12. Commercial Natural Gas Consumption (MCF)	406462.	1299535.	2099624.	959449.	399430.	1389474.	1890077.	1760704.	398174.	1125927.	1687452.	939284.
13. Industrial Natural Gas Connections	96.	93.	91.	92.	96.	93.	91.	91.	91.	95.	98.	93.
14. Industrial Natural Gas Consumption (MCF)	4837885.	5250938.	3191574.	2380289.	2328525.	3060300.	2914089.	1885998.	1309870.	1770920.	1129556.	INA
15. Other Natural Gas Connections	46.	46.	46.	47.	42.	42.	42.	40.	38.	37.	37.	37.
16. Other Natural Gas Consumption (MCF)	5893.	355.	209.	1805.	8039.	221.	216.	1136.	5478.	132.	170.	1225.

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[1] Some small utilities do not report, hence the data are slightly less than actual state totals. The data are consistent. The same utilities' reports are included in each figure.

[2] "Other" includes agriculture, municipal, and other public.

Sources: Series 1-16: Reports to IPR by selected electric and natural gas utility companies. Survey conducted monthly.

Average Rents by City, First Quarter 1987

City	Apartment	Trailer Lot	House	Mobile Home
Cheyenne	$328.15	$132.00	$435.00	$274.29
Buffalo	270.00	106.25	279.37	230.00
Casper	256.64	146.33	336.63	261.33
Cody	297.04	130.00	370.71	276.30
Douglas	280.45	116.66	389.33	210.00
Evanston	270.20	181.00	398.27	330.60
Gillette	269.35	175.00	441.78	247.89
Greybull	200.00	76.50	191.66	209.44
Jackson	357.33	117.50	469.53	340.00
Kemmerer	287.77	135.00	345.20	350.00
Laramie	316.96	122.66	363.81	263.82
Lusk	245.00	90.00	235.00	255.73
Newcastle	280.30	82.50	279.37	231.53
Pinedale	281.66	150.00	377.08	320.71
Rawlins	258.57	122.50	289.78	235.00
Riverton	238.28	101.25	297.28	262.50
Rock Springs	309.44	165.37	421.73	300.69
Sheridan	274.93	132.50	306.19	292.77
Sundance	246.25	80.00	295.00	204.16
Thermopolis	268.38	130.00	271.42	281.34
Torrington	277.27	63.33	258.92	199.00
Wheatland	234.50	90.00	275.00	248.00
Worland	273.57	105.00	321.15	270.34
Lander	202.78	108.00	301.86	235.00
Statewide	$271.87	$119.14	$331.29	$263.77

Source: Research and Statistics, Wyoming Department of Administration and Fiscal Control.

Wyoming Comparative Cost of Living Index (April 1-3, 1987); Statewide Average = 100

City	Rank	All Items	Food	Housing	Apparel	Transportation	Medical	Reccare[1]
Jackson	1	114.2	100.3	131.6	92.7	104.3	96.9	106.3
Gillette	2	107.7	103.4	117.8	87.4	99.9	108.2	100.1
Pinedale	3	107.6	102.9	113.8	105.5	100.4	111.7	102.3
Rock Springs	4	106.9	100.1	117.0	97.0	99.5	93.8	102.6
Cheyenne	5	105.4	100.2	112.9	107.6	97.7	98.3	99.6
Evanston	6	105.3	97.9	113.1	99.7	102.9	104.8	95.6
Kemmerer	7	105.2	102.5	111.3	106.0	100.1	99.8	96.9
Douglas	8	103.5	100.7	104.9	110.1	102.5	101.4	101.5
Laramie	9	102.3	101.4	105.3	104.1	97.9	97.8	101.0
Cody	10	102.3	105.3	102.3	101.1	103.6	90.9	101.8
Casper	11	101.9	100.8	100.4	94.4	108.2	109.3	100.6
Sheridan	12	100.7	103.1	98.7	107.7	100.1	109.0	98.4
Sundance	13	99.4	100.8	100.0	93.3	98.5	98.0	100.4
Rawlins	14	99.9	99.8	93.5	93.5	99.0	105.8	99.4
Worland	15	96.7	96.1	96.7	95.1	97.7	100.0	95.5
Riverton	16	96.7	96.6	93.3	91.9	103.2	104.5	98.3
Newcastle	17	96.3	104.1	90.4	100.3	97.9	97.9	101.2
Wheatland	18	95.9	99.3	90.1	105.9	101.1	94.5	99.7
Thermopolis	19	95.7	99.5	90.6	107.3	97.1	99.4	99.0
Buffalo	20	95.7	99.3	89.3	110.8	98.3	95.0	101.9
Lander	21	94.6	97.9	90.5	92.4	96.7	104.0	98.2
Lusk	22	91.1	98.6	81.8	95.9	97.5	92.4	100.6
Greybull	23	89.4	100.1	74.7	107.4	100.0	94.3	98.6
Torrington	24	88.5	89.3	80.3	93.1	96.1	92.4	100.6

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[1] Recreation and Personal Care.

Source: Research and Statistics, Wyoming Department of Administration and Fiscal Control.

FORMAT

For data available at least quarterly, the last 12 quarters are printed in WQU. In this edition, published series begin with the 3rd quarter of 1984, and end with the 2nd quarter of 1987. For other data series (primarily annual), the most recent observations, up to 12, are published in WQU. Quarters are calendar quarters. For example, the 3rd quarter is composed of July, August, and September. In the table headings and narratives, a particular quarter will be indicated by notation such as 2/85 (2nd quarter, 1985), 1/85 (1st quarter, 1985), and so on.

Beside each data series name is an abbreviation in parenthesis. The abbreviation indicates the units (such as dollars, tons, feet, miles, etc.) of the data. The key to the units abbreviations is below.

Throughout WQU, all data are for the State unless otherwise stated. The most recent year's data should be viewed as preliminary, due to revisions. The acronym "INA" signifies that information is not available.

The reader should be attentive to the footnotes at the bottom of pages, particularly those accompanying a data table. The footnotes help the reader to properly interpret the data, and they also indicate when more detailed (by subject or by area) data than that which is shown is available from IPR. A list of sources follows the footnotes.

Key to Units Abbreviations

MBF - Thousand Board feet

KWH - Kilowatt Hours

TKWH - Thousand Kilowatt Hours

$ - Dollars

H$ - Hundreds of Dollars

T$ - Thousands of Dollars

M$ - Millions of Dollars

B$ - Billions of Dollars

GL - Gallons

TGL - Thousands of Gallons

ST - Short Tons

HST - Hundreds of Short Tons

TST - Thousands of Short Tons

$/ST - Dollars Per Short Ton

HBBL - Hundreds of Barrels

TBPD - Thousands of Barrels Per Day

MCF - Thousands of Cubic Feet

HMCF - Hundreds of MCF Per Day

MMCFD - Million Cubic Feet Per Day

1970 1980

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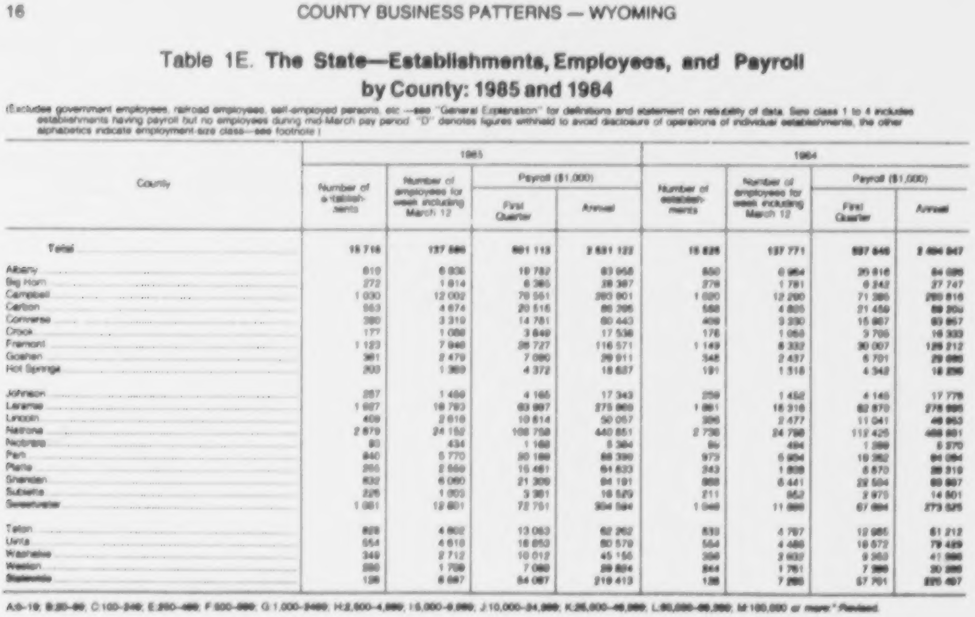
County Business Patterns: 1985 for Wyoming was released this spring by the U. S. Bureau of the Census. The report provides detailed data on major industries, including agricultural services, forestry, and fisheries; manufacturing; retailing; wholesaling; service businesses; contract construction; mining; transportation and other public utilities; and finance, insurance, and real estate. Excluded are farm workers, all government employees, and the self-employed. The data contained in this report can be especially useful in analyzing market potential; determining locations and size of sales territories; establishing sales quotas and advertising budgets; and locating production, marketing, and service facilities. Printed below is a table from the report.



16 COUNTY BUSINESS PATTERNS — WYOMING

Table 1E. The State—Establishments, Employees, and Payroll by County: 1985 and 1984

(Excludes government employees, railroad employees, self-employed persons, etc.—see "General Explanation" for definitions and statement on reliability of data. Size class 1 to 4 includes establishments having payroll but no employees during mid-March pay period. "D" denotes figures withheld to avoid disclosure of operations of individual establishments; the other alphabetics indicate employment-size class—see footnote.)

County	1985				1984			
	Number of establishments	Number of employees for week including March 12	Payroll ($1,000)		Number of establishments	Number of employees for week including March 12	Payroll ($1,000)	
			First Quarter	Annual			First Quarter	Annual
Total	15 716	[illegible]	601 113	2 631 122	15 826	137 771	597 646	2 494 847
Albany	610	6 836	19 787	83 958	650	6 964	20 616	84 [illegible]
Big Horn	272	1 814	6 365	28 387	279	1 781	6 242	27 747
Campbell	1 030	12 002	70 561	283 801	1 020	12 290	71 386	280 816
Carbon	563	4 674	20 516	86 296	588	4 805	21 459	88 204
Converse	380	3 310	14 781	60 443	408	3 230	15 667	63 657
Crook	177	1 088	3 640	17 536	176	1 066	3 706	16 333
Fremont	1 123	7 946	25 727	116 571	1 149	8 332	30 007	128 212
Goshen	361	2 479	7 080	29 911	348	2 437	6 701	29 [illegible]
Hot Springs	200	1 360	4 372	18 637	191	1 318	4 348	18 [illegible]
Johnson	267	1 486	4 165	17 343	259	1 452	4 146	17 779
Laramie	1 927	18 793	63 997	275 969	1 861	18 316	62 870	278 [illegible]
Lincoln	409	2 616	10 614	50 057	396	2 477	11 041	46 953
Natrona	2 679	24 152	108 758	440 851	2 736	24 798	112 425	468 601
Niobrara	90	434	1 168	5 384	96	494	1 [illegible]	5 370
Park	840	5 770	20 166	88 390	973	5 904	19 262	84 [illegible]
Platte	256	2 566	15 461	61 633	243	1 808	6 870	28 310
Sheridan	832	6 060	21 300	84 191	868	6 441	22 504	80 897
Sublette	226	1 003	3 381	16 529	211	852	2 875	14 501
Sweetwater	1 081	12 801	72 751	304 [illegible]	1 046	11 [illegible]	67 [illegible]	273 625
Teton	828	4 802	13 063	62 262	833	4 787	12 985	61 212
Uinta	554	4 610	18 850	80 579	564	4 486	18 672	79 429
Washakie	349	2 712	10 012	45 156	396	2 602	9 363	41 [illegible]
Weston	380	1 709	7 080	28 824	344	1 761	7 [illegible]	30 [illegible]
Statewide	136	6 687	54 087	219 413	138	7 [illegible]	57 701	225 407

A:0-19; B:20-99; C:100-249; E:250-499; F:500-999; G:1,000-2499; H:2,500-4,999; I:5,000-9,999; J:10,000-24,999; K:25,000-49,999; L:50,000-99,999; M:100,000 or more. ʳ Revised.

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We look forward to assisting you in the future.

Suzanne Taylor and G. Fred Doll
Institute for Policy Research
University of Wyoming

Phil Kiner
Research and Statistics Division
Department of Administration and
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